Financial Operations of Non-Financial Firms: The Case of South Africa

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Abstract

Using South Africa as a case study, this thesis examines what role financial operations play in the activities of non-financial firms and their impact on the macro economy. Rising corporate cash holdings are used as analytical lens to evaluate competing theories. South Africa, with its relatively deep financial markets, has elicited clear predictions from mainstream and heterodox economists. The former expect rapid economic growth driven by business investment, while the latter believe non-financial firms engage in financial speculation, thus reducing growth.

While the thesis agrees with the heterodox view that changes in financial activity of South African non-financial corporations have had an adverse effect on financial stability and job creation, it challenges the simplistic view that non-financial firms have engage in more financial speculation. Crucially, since the 1990s non-financial corporations have shifted from using their financial resources to extend trade credit to small and informal businesses, towards active liquidity management. A driving force behind this trend are mining companies and large JSE-listed non-financial (and non-mining) companies, frequently engaged in merger and acquisitions. Thus, large South African non-financial corporations are overcapitalised, meaning they hold more liquid assets than necessary for their productive operations. This shift meant that informal companies, which notoriously suffer from poor access to finance, lost an important source of credit. The thesis argues that non-financial corporations' liquidity management facilitates credit extension by domestic banks, fuelling the domestic real estate bubble. Changes in financial operations of non-financial companies, under way since the 1990s, have impacted growth and financial stability adversely. Thus, this thesis argues against the mainstream claim that South African growth has been facilitate by the domestic financial sector, while shedding light on the complex processes behind the transformation of non-financial firms' financial transactions, which are not simply speculative as claimed by financialisation proponents.

The originality of the thesis lies in its contribution to the understanding of the processes behind financial operations of non-financial companies, in particular how these firms utilise financial operations to support their speculation in real assets. As consequence, they are overcapitalised. The research also contributes to the growing literature on financialisation in emerging economies. The thesis develops an operationalisation of the concept of overcapitalisation and an original adaptation of existing flow-of-funds analysis of corporate investment.

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List of acronyms

Due to stylistic reasons the use of acronyms has been kept to a minimum.

AER	African Eagle Resources (JSE-listed company)
BAT	British American Tobacco
BEE	Black economic empowerment
FIRE	Finance, insurance and real estate
GBP	British Pounds
GDP	Gross domestic product
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
JSE	Johannesburg Stock Exchange
LSE	London Stock Exchange
M&A	Mergers and acquisitions
MRI	Mine Restoration Investments (JSE-listed company)
NFA	National financial accounts
NFFs	Non-financial firms
NIPA	National income and production accounts
OCR	Overcapitalisation ratio
OECD	Organisation for Economic Cooperation and Development
R	South Africa Rand
SARB	South African Reserve Bank
SMEs	Small and medium-sized enterprises
SMMEs	Small, micro and medium-sized enterprises
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UK	United Kingdom
US	United States

Chapter I: Introduction

'[I]t is not the theory that is paradoxical but its subject – the capitalist economy'

Kalecki (1990[1939], p. 318)

Corporations and their activities are at the core of the economic system since, to use Thorstein Veblen's words, '[t]he material framework of modern civilization is the industrial system, and the directing force which animates this framework is business enterprise' (Veblen, 1904, p. 1). Therefore, corporate operations should be expected to be, almost naturally, an elementary object of the study in economics, which as a 'theory of the modern economic situation must be primarily a theory of business traffic, with its motives, aims, methods, and effects' (Veblen, 1904, p. 2). The broader macroeconomic importance of corporate transactions lies in the driving force that business investment exerts on the business cycle and growth.

However, non-financial businesses and the processes underlying their activity are often absent from, or caricatured as passive in economic theory. For instance, much of corporate finance theory (despite its name) does not deal with decisions taken by corporations, but rather with investors' decisions about dealings in corporate paper, such as equity and bonds. Financial transactions undertaken by non-financial companies are rarely considered within mainstream theory (see Myers, 1984).

Among heterodox economists, the involvement of non-financial companies in financial investment has been acknowledged for some time. Nevertheless, the puzzle does not seem resolved. For some financialisation proponents (especially of the post-Keynesian variety), non-financial companies are passive victims of financial deregulation and the rising power of the rentier. For others,

they have become financial speculators, shifting their source of profit from production to financial investment.

The author of this thesis is passionate about re-establishing the importance of the non-financial firm, its centrality in economic processes and its impact on economic structures, including - importantly - financial transactions. This, of course, does not mean that non-financial companies solely determine economic processes. To the contrary, the thesis will show that pressing the modern company into a rigid model does not work. Non-financial corporations are not simply at the mercy of rentiers; they can be rentiers themselves. Their business activities are complex: they engage in financial precaution, while speculating in real assets.

1.1. Research question

In order to reveal the processes which underpin financial and business transactions within non-financial companies, this thesis pursues the following research question: What role do financial operations play in the activities of non-financial firms, and what impact do they have on the macroeconomy? Throughout this thesis, orthodox (or mainstream) and heterodox economic theories will be distinguished to structure the analysis. While mainstream economists operate in an equilibrium framework and carefully avoid the discussion of any form of power, heterodox economists stress the inherent instability of the capitalist system and the importance of economic and political power.[1]

Since economic activity does not happen in a vacuum, but is contingent on historical time and space, a country case study was chosen. South Africa is an ideal case study and was, therefore, purposefully chosen for this thesis for two main reasons:

[1] Also see Lavoie (2006), F. Lee (2008) and Dymski (2014) on the difference between orthodox and heterodox economics.

(1) Heterodox financial theory, which explicitly acknowledges the financial dealings of non-financial companies, provides the theoretical basis for the thesis. However, financialisation approaches, as well as Kaleckian financial theory (such as the capital market inflation theory, see Toporowski, 2000), have been developed in the context of advanced economies, mainly with the Anglo-Saxon countries in mind. Extending the theory to an emerging market setting and accounting for the distinctiveness of developing economies – especially South Africa's rich mineral resources, which are characteristic of many developing countries – constitutes one of the original aspects of this thesis.

And (2), contrary to popular belief, many emerging economies possess financial markets, which are long-standing, deep and liquid. South Africa is a good example. The Johannesburg Stock Exchange (JSE) is the largest stock exchange in Africa and its establishment can be traced back to 1887, when it emerged out of the need to finance capital-intensive mining production in the country (Johannesburg Stock Exchange, 2012). South Africa today possesses some of the deepest and most liberalised financial markets among emerging economies. In 2009, the Milken Institute's capital access index ranked South Africa among the 25% top performing countries in its assessment of businesses' and entrepreneurs' ability to access domestic and foreign capital (Barth, Li, Lu, & Yago, 2010).[2] Since the early 1990s, following a general global trend, South Africa has liberalised its financial markets, however without reaping the promised gains in growth driven by expected improvements in financial intermediation (Rashid, 2013).

Methodologically, the thesis represents a diachronic single-case study because the South African economy and the changes it underwent over time are analysed in detail (Gerring, 2007). The analytical lens chosen for this thesis are

[2] This mainly refers to large corporations' access to finance because small and medium-sized enterprises (SMEs) notoriously struggle to secure external financing (see Berry et al., 2002, World Bank Group, 2007).

holdings of cash and cash equivalents by non-financial firms. The heightened liquidity preference among large corporations in advanced economies has gained increasing academic and media attention in recent years. Large multinational companies have been criticised in the aftermath of the global financial crisis because they have been holding on to large volumes of liquid assets instead of investing their cash or paying it out to shareholders (Waters, 2014). Standard & Poor's has claimed that multinational investment globally was reduced by some US$ 900 billion between 2012 and 2013 due to corporate liquidity holdings (Sakoui, 2014). The negative relationship between cash holdings and corporate investment is also supported by findings in the empirical corporate finance literature (Lee & Suh, 2011; Baum, Schäfer, & Talavera, 2007), which will be discussed in the following chapter.

Despite this recent surge in attention to corporate cash holdings the phenomenon is by no means a new one. Bates, Kahle, & Stulz (2009) have documented a secular increase in cash holdings as share of total assets of US non-financial firms since the 1980s. Similar long-term trends have been reported in other major OECD countries. Iskandar-Datta & Jia (2012) find that for non-financial companies in Australia and Canada median cash and marketable securities as share of total assets have more than doubled between 1991 and 2008. The ratio has grown by between 40% and 90% in Germany, the UK and the US over the same period.

Similar to US companies, South African firms have been holding large amounts of cash on their balance sheets and have also come under criticism for their sluggish investment and unwillingness to pay out higher dividends. Corporate cash holdings in South Africa exceeded R500 billion[3] in early 2003. Since interest rates have simultaneously been at a historical 30-years low, this development is

[3] Currently ca. GBP25 billion.

somewhat of a puzzle to economic commentators (Gunnion, 2012; Bruggemans, 2013).

1.2. Working hypotheses

South Africa, with its relatively deep financial markets, has elicited clear predictions from orthodox and heterodox economic theory: mainstream economists and policy makers expect South Africa's liberalised financial institutions to support rapid economic growth driven by business investment (see Jones, 2009; BRICS, 2012; National Planning Commission, 2012), while financialisation researchers believe non-financial corporations engage in financial speculation, which jeopardises growth (Ashman, Fine, & Newman, 2011; Ashman, Mohamed, & Newman, 2013; Ashman & Fine, 2013; McKenzie, 2013; Marais, 2011). What the mainstream (including hopeful policy makers) perceives as South Africa's way out of its socio-economic difficulties, critical heterodox economists flag as the core of the country's economic problems: finance and specifically the changing nature of non-financial firms' financial transactions, often labelled as 'financialisation'.

This thesis argues that South Africa's financialisation story is a more complex one. The mainstream view can be refuted. In contrast to popular perception (Amphlett, 1914; Jones, 2009), the South African financial sector, and especially the big banks, did historically not contributed to the country's economic and industrial development because long-term funding was not made available. South African non-financial companies, and especially mining conglomerates financed much of their investment internally, especially during the second half of the 20th century. But equally the heterodox argument misses out on layers of complexity by lazily accusing large South African NFFs of financial speculation that emerged as consequence of the country's financialisation since the mid-1990s. In fact, NFFs always invested heavily into financial instruments in South Africa. Crucially, NFFs changed (rather then intensified) their financial

investment strategies in the course of the 1990s, shifting away from trade credit towards active liquidity management. Thus, this thesis reveals the mechanisms behind the heterodox 'gut feel' that finance in South Africa is not contributing towards investment and employment creation, but rather weakening the local economy.

The mainstream argument has its roots in the financial deepening story, which is influential in economic theory and policy until today. It claims that the presence of deep financial markets will foster economic growth (see Levine & King, 1993, Levine, 1997, Levine, 2005). The assumption behind the claim is that non-financial companies in developing and emerging economies lack access to financial markets and liquidity in comparison to their peers in richer economies.

Consequently, financial market liberalisation has been promoted as development policy and implemented in a range of emerging and developing economies for some time. South African policy makers see the country's deep financial markets as major strength, promoting their policies and institutional example as best practice from which other emerging economies should learn (BRICS 2012). Equally, the government's National Development Plan 2030 identifies sophisticated financial services (alongside South Africa's resource endowment) as comparative advantage that will form the basis for the country's future growth (National Planning Commission, 2012).

In contrast, from a heterodox perspective, South Africa appears to exemplify the 'financialised' emerging economy. The financial sector is perceived to be at the core of South Africa's ailing economy. Since the end of apartheid the financial sector's share in South African gross domestic product (GDP) has grown rapidly, trebling between 1994 and the 2007-8 financial crisis (Marais,

2011). As a consequence, the sector[4] accounts for more than one fifth of South African output today (SARB, 2015a), which makes it the single largest contributor to GDP. This sectoral growth has been interpreted as financialisation of the South African economy in the belief that the country's low private investment rate is the consequence. This has also been coined the emergence of the 'financialised mineral-energy complex' (Ashman et al., 2011). The term refers to an increased importance of financial players within the South African economy, which has traditionally been dominated by the mining industry and other closely linked capital- and energy-intensive sectors. The processes behind the argument that finance is the actual problem in the South African economy are often scantily explained, resembling an academic 'gut feel'. Crucially, heterodox economists identify rampant and allegedly speculative financial transactions by non-financial firms as main cause of South Africa's stagnant development and sluggish job creation (Marais, 2011, Ashman & Fine, 2013).

This thesis, in contrast, argues that South African corporations have not dramatically increased but fundamentally changed their financial transactions. Large non-financial companies in the country have always been very closely intertwined with the financial sector; to the extent that Anglo American, for a long time the largest and one of the oldest among South African businesses, was instrumental in establishing the local money market. Similarly, there is little evidence that these corporations are engaged in financial speculation. They rather speculate in real assets.

Crucially, since the 1990s non-financial corporations have shifted from using their financial resources to extend trade credit to small and informal businesses,

[4] The data refer to the categories provided by the South African Reserve Bank. Here finance is subsumed under the heading: 'Finance and insurance, real estate and business services'. Business services include services that are used by the private sector, most prominently private security and cleaning services.

towards active liquidity management. Thus, large South African non-financial corporations are overcapitalised, meaning they hold more liquid assets than would be necessary for the running of their productive operations. Two types of large JSE-listed non-financial companies are driving the overcapitalisation trend. On the one hand, mining companies hold large volumes of liquid assets out of precaution due to the inherently speculative nature of mining exploration and activity. On the other hand, large established non-financial corporations outside of the mining sector have increasingly engaged in mergers and acquisitions, which also requires liquid asset holdings.

Since overcapitalisation is a central concept in the analysis to come, a brief definition is required. Historically, overcapitalisation referred to the overstating of goodwill on the balance sheets of companies that had undergone mergers and acquisitions. Future profits – often due to the monopoly position of the acquired company – were expected to be large, pushing up the price of the acquisition (see Leake, 1938, Lenin, 1975[1917]). This higher price increased the value of equity on a company's balance sheet after its acquisition and was therefore balance on the asset side by an increase in goodwill. In Kaleckian financial analysis (Toporowski, 2008), overcapitalisation emerges during periods of capital market inflation when companies can raise funding in capital markets cheaply as equity prices are on the rise. Instead of inflating goodwill to balance the growing volume of equity, issuing companies hold on to liquid assets since this is the safest way to ensure that the balancing of assets and liabilities.

The shift of financial operations among South African non-financial firms – from providing trade credit towards their own overcapitalisation – meant that informal companies, which notoriously suffer from poor access to finance, lost an important source of credit.

Therefore, this thesis argues that non-financial corporations' liquidity management facilitates credit extension by domestic banks, which in turn fuels the domestic real estate bubble. Hence, changes in financial operations of non-financial companies, under way since the 1990s, have impacted economic growth and financial stability adversely, but not because of their sharp increase or their speculative nature as heterodox writers suggest. Thus, this thesis agues against the mainstream interpretation of South African growth, while shedding light on the processes behind the transformation of non-financial firms and their financial transactions since the 1990s, highlighted by financialisation proponents.

From a theoretical perspective, the thesis argues that the financialisation literature oversimplifies financial activity by NFFs by either reducing it to financial speculation or a shift from bank-based to market-based finance. As consequence, in much of the financialisation literature NFFs are merely reacting to changes under way in the financial sectors of advanced and emerging economies. The case of South Africa shows that NFFs can and do actively shape financial structures, for instance through their own liquidity management.

1.3. Structure and methodology

This thesis is written in the Kaleckian tradition, putting firms (and their heterogeneity) centre-stage, while abstracting from government activity to some extent. That does not mean that government policies and institutions important for the analytical narrative will be neglected. Rather, it means that, given the research question, the focus will mostly be on non-financial companies and state action will be considered primarily where it is significant to explain business behaviour.

In a Kaleckian manner, microeconomic and macroeconomic phenomena are understood as organically interlinked, that is, different aspects of the same processes with the same underlying principles at work. This is especially

evident in Josef Steindl's work who 'moves freely between the micro-economics of the firm, and the macro-economics of the economy' (Toporowski, 2005a, p. 108). As consequence, the thesis will deal with three analytical levels on which financial operations of non-financial firms have an impact: (1) the individual firm, (2) its interaction with other companies on the industry level and, finally, (3) the economy as a whole.

The first and the last levels of analysis fit neatly into the traditional micro-macro distinction. This distinction will be used as an organising principle for the chapter structure of the thesis. Thus, chapters 2 through 4 will deal with microeconomic analysis, while chapters 5 to 7 will address the macroeconomic perspective. Since micro and macro analysis are intrinsically linked these two halves will frequently relate to each other and connections across chapters are highlighted throughout. The close interrelation of micro- and macroeconomic analysis is also evident in the second level, i.e. the industry layer. Issues of industry specificities and firm heterogeneity will be discussed wherever they arise in both parts, providing the organic link.

The formulated research question has been broken down in three more specific queries for both the micro- and the macroeconomic levels. The microeconomic analysis will be guided by the following three questions:

(1) What is the role of financial operations within the operations of non-financial businesses?

(2) Which non-financial businesses are considered when analysing financial operations?

(3) Why might non-financial firms increase their holdings of liquid assets (such as cash and cash equivalents)?

These three questions will be addressed in chapters 2 to 4 and answers will be provided by way of summary at the end of each chapter.

Likewise, the macroeconomic analysis will be guided by the three questions below:

(1) What is the macroeconomic role of financial institutions?

(2) What (or who) drives credit extension?

(3) How are non-financial companies as a whole positioned vis-à-vis financial institutions? The last question is one of agency or, if one wants, power: Who is the more powerful party in the interaction between financial intermediaries and non-financial businesses? The answers to these three questions will in turn be given at the end of chapters 5 to 7.

The three chapters constituting the micro- and macroeconomic parts, meaning chapters 2-4 (micro) and chapters 5-6 (macro), are organised in the following way: first a theoretical overview in the form of a literature review is laid out (in chapter 2 and 5, respectively). Here the most salient and most interesting contributions that inform the formulated questions are discussed. This is followed by a methodological chapter (chapters 3 and 6), explaining the analytical methods used to understand the South African economy. Finally, the analysis is implemented in the last chapter of each section (chapters 4 and 7) and findings are presented. Chapter 8 provides a summary of the thesis and its main conclusions, bringing micro- and macroeconomic analysis together.

The empirical work in this thesis rests on comprehensive balance sheet analysis with respect to the microeconomic level, and on flow-of-funds analysis when examining the macroeconomic level. The comprehensive balance sheet approach is an analytic method developed by the author, which uses conventional financial ratios to identify non-financial firms of a certain character (here, overcapitalised non-financial firms, that hold liquid assets beyond their requirements for productive operations) and subsequently, undertakes a detailed qualitative assessment.

Once these overcapitalised non-financial companies were detected, their financial information (including balance sheet, cash flow statement and the notes to both financial statements) was studied in detail, and combined with qualitative data, which is used to develop a thorough understanding of processes and contexts. Qualitative information was extracted from annual reports, JSE announcements, circulars, pre-listing statements and information available on official company websites. Consequently, this methodology can be classified as mixed method since both quantitative and qualitative information was probed and juxtaposed (Johnson, Onwuegbuzie, & Turner, 2007; Flick 2014).

The author consciously subscribed to this explorative method in order to allow for hypotheses generation (rather than merely testing hypotheses). This method also introduced substantial methodological and intellectual freedom, without sacrificing empirical rigour. The emphasis is on describing and explaining causal mechanisms, rather than on finding causal effects (Gerring, 2007). Thus, informed by relevant economic theory the *processes* behind non-financial firms' behaviour are analysed with the help of quantitative and qualitative data. In this sense, the thesis used an inductive rather than a deductive approach (Bryman, 2012). On the microeconomic level this is justified by the fact that much of the hypothesis testing around the corporate liquidity preference has failed to generate a convincing *explanation* for non-financial businesses' liquid asset holdings. Crucially, the quantitative data used is often either of a questionable quality or unable to provide the nuanced insights that qualitative data holds.

On the macroeconomic level, a flow-of-funds approach was adopted. Here, the Corbett & Jenkinson (1996, 1997) methodology was used to identify the main net sources of investment funding among non-financial corporations in aggregate. Since the thesis focuses on financial transactions of non-financial businesses, the methodology was adapted, in a second step, to account for gross

sources and uses of funds among non-financial firms. Finally, an estimate of financial asset stocks held by non-financial firms in aggregate was constructed, since this is missing from the available flow-of-funds data for South Africa.

An important comment concerning terminology is in order here. The terms 'non-financial firm', 'non-financial business' and 'non-financial company' are all used interchangeably in the thesis, referring to all types of non-financial enterprises. In contrast, 'non-financial corporation' is purposefully used only to denote listed non-financial companies. When referring to small businesses, the terminology follows South African convention and legislation and uses the terms micro and very small enterprises for informal (that is non-tax registered) enterprises, which do not employ more than five people. When discussing these non-financial businesses the prefix 'non-financial' was usually dropped.

1.4. Data and data sources

The result of the comprehensive balance sheet approach is a survey of 132 companies, which is summarised in Table 4.4. in chapter 4. The table provides information about each company's activity or activities, the date and place of incorporation and listing (including any information on secondary listings), the source of company cash flow and JSE market capitalisation as of April 2013. Any peculiarities are noted in a comments section, which is also part of the company profile. The data work in chapter 4 was carried out between January and September 2013 and covers data up to the financial year 2012, using mainly the INET BFA database, supplemented by officially available corporate information and the database provided by ShareData. Both databases are of a commercial nature, mainly catering to financial investors.

Some of the most valuable information (as is often stressed by accountants) is in the notes to the financial statements. These notes provide further detail and disaggregation as well as additional explanation. They enrich the data substantially. The annual report itself is of importance because it contains

additional qualitative data. The author spent, for instance, considerable time studying the chairman's letter in each annual report. The letter provides the management's explanation of company performance and rational for decisions taken. Of course, this is a marketing tool and needs to be read critically.

Nevertheless, many of the highly liquid companies, holding on to considerable cash and cash equivalents in the face of shareholders complaints, commented on their justifications for high cash holdings. Mainstream balance sheet analysis does not pay attention to this level of detail. In fact, such an in-depth treatment of annual reports on such a large scale is arguable only feasible in a long-term research project.

Another layer of information that was revealed during detailed study of annual reports was the actual nature of corporations' business activity. While listed companies are classified by sector on the JSE, this classification often only reflects one important activity of a firm, but does not necessarily adequately categorise its operations. This is especially true for large, diversified (holding) companies, which effectively would have to be classified under two or more sectoral headings. This information is not provided by the INET BFA database and was extremely difficult to obtain, especially for delisted companies. Historical information on firms' listings is also not available. This means changes in sectoral membership are not flagged. Thus, a firm might start operations as a consumer goods producer, but transform itself into a diamond mining firm in the course of a couple of years (see, for instance, the case of Goodhope Diamonds Ltd). All of these nuances highlight the complexity of firms' characteristics and histories.

Given the large presence of foreign companies, balance sheet analysis of JSE-listed firms is only meaningful in conjuncture with the assessment of the flow of funds. The flow of funds provides a picture of the South African economy in the international context. By contrast, sectoral balance sheets provided by INET

BFA, for example for the mining industry, are unlikely to be representative for the position of the domestic mining sector. A large number of JSA-listed companies have significant global operations, which do not affect the South African economy but show up on the corporate balance sheet.

The microeconomic empirical analysis (in chapter 4) had to strike a fine balance between the depth of the analysis and its breadth. As will be discussed in more detail in chapter 4, the INET BFA database provides data on the full population of JSE-listed corporations for the period since 1994. Data before 1994 (stretching back to 1970) is less reliable. On this basis a large number of non-financial corporations were identified as having high (and potentially excessive) holdings of liquidity (namely 132). Consequently, comprehensive qualitative data had to be gathered for all 132 companies. However, as pointed out by Gerring (2007) cross-case studies of a number of analytical units (in this case non-financial corporations) can only be undertaken and, more crucially, presented effectively for around a dozen cases at a time. The larger the number of units studied, the harder it is to convey the level of depth and detail that makes out the essential characteristic of case study work.

Therefore, for 20 cases (where non-financial corporations had the highest volumes of liquidity on their balance sheet as measured by the conventional cash ratio) the motivations and processes behind corporate financial operations are presented in detail by tracing those companies' business history. For the full set of 132 corporations, 16 analytical categories were constructed to facilitate the analysis. In this way, the author has created an original dataset capturing a large range of qualitative characteristics of South African listed corporations with a high liquidity preference.

For the macroeconomic analysis, flow-of-funds data was obtained from the South African Reserve Bank (SARB). A rare SARB Quarterly Bulletin supplement was located to include data that stretches back to 1970. Thus, the

period covered in the macroeconomic analysis is 1970 to 2014. In the interest of looking at this longer time period, annual data have been used, as quarterly data are only available since 1990. Analysing the South African flow of funds is crucial because the National Financial Accounts (NFA) link real economic activity to financial transactions, which is the focal point of this thesis. The NFA are set up as tables with columns representing different economic aggregates and sub-sectors, whereas rows provide transaction items (see tables A.2. and A.3. in the appendix for the 2014 flow of funds data for South Africa). The macroeconomic aggregates constructed by the SARB are the following (SARB, 2011): (1) General government (including central and provincial and local government), (2) households and others (this includes all non-incorporated firms), (3) non-financial corporate business enterprises (subdivided into state-owned and private non-financial corporations), (4) financial intermediaries (including the monetary authority, other monetary institutions, the Public Investment Corporation, insurers and retirement funds and other financial institutions) and (5) the foreign sector.

Importantly, the absence of further disaggregation of the non-financial corporate sector (by legal type of business for instance) and the incorporation of non-incorporated firms into the household sector made it difficult to account for firm heterogeneity. This was done where possible by contrasting findings across the different economic levels (i.e. micro, industry and macro).

1.5. Major findings

The thesis finds micro- and macroeconomic evidence for the overcapitalisation of South African firms, especially listed corporations. Their overcapitalisation, which has intensified since the 1990s, weakens the country's growth and job creation by undermining the link between large formal and small informal companies. Furthermore, the large volumes of liquid assets held on South African non-financial firms' balance sheets and with local banks feed into the

South African real estate bubble as funds are recycled into mortgages and loans to the FIRE (finance, insurance and real estate) sector. The emerging market context is crucial to explain the effect of non-financial firms' overcapitalisation on credit extension. Since the SARB (South African Reserve Bank) is concerned that capital outflows could hurt the local economy, which has been running a large and persistent current account deficit over the past decade, it stops short of a commitment to stable and *low* interest rates for commercial banks' lending. In this sense, SARB's policy differs fundamentally from that of many central banks in the OECD. Especially the Bank of England and the US Federal Reserve, the central banks part of the deepest and most innovative financial markets, have embraced this commitment whole-heartedly. The large South African banks still focus on lending as their core business, lacking signs of 'financialisation'. Therefore, the presence of rising corporate liquid funds on their balance sheets facilitated and arguably pressured them to create loans, offsetting the liability of corporate liquidity.

More concretely, microeconomic analysis shows that a considerable number of South Africa listed non-financial corporations is overcapitalised, meaning possesses cash and cash equivalents and other liquid assets beyond their liquidity needs for productive operations. The motives for these holdings are both precautionary considerations as well as speculative intentions. The close study of financial processes within these non-financial firms shows that it is not always possible to clearly differentiate between productive and speculative activity. A major reason to hold large amounts of cash for non-financial corporations is the ability to acquire business interests. Almost half (58) of all studied companies showed evidence of speculation in subsidiary trading. This type of activity can be a speculation in real, rather than financial, assets as much of the financialisation literature predicts to be characteristic for 'financialised' non-financial companies, especially in the context of an emerging market like South Africa.

Generally, the rising liquidity preference among South African listed non-financial corporations is strongly shaped by the country's specific geographic location and mineral endowments. Thus, a large proportion of financial dealings by non-financial business is undertaken among mining companies, the industry which has fundamentally moulded the economy since the beginnings of capitalism in South Africa.

A change in financing patterns among the large mining-finance houses during the 1990s has resulted in a number of mining exploration companies being forced to finance themselves outside of the mining-finance houses' structures. These individual businesses are often small in scale and need to overcapitalise, that is to hold more liquid assets than would potentially be necessary for routine business operations, to ensure their survival until exploration is successful and they can sell their mining rights, or even until the mine development stage is completed. However, in attempting to reduce their own financial fragility (at the microeconomic level), overcapitalised non-financial corporations contribute to rising macroeconomic fragility through their impact on the balance sheets of financial institutions and small and medium enterprises.

Flow of funds analysis shows that non-financial corporations in South Africa in aggregate historically have engaged extensively in financial transactions, while financing the majority of their gross capital formation internally. In the New South Africa (since 1994), these companies have changed the composition of their financial operations, rather than simply intensifying them. The change consisted of a reduction in trade credit towards households and non-incorporated firms, and an increased holding of cash, bank deposits and other financial assets. Thus, macroeconomic data also supports the finding that non-financial companies, increased their liquidity preference as documented for the microeconomic level.

Crucially, flow of funds analysis shows that the intensified liquidity management by non-financial companies impacts the balance sheets of South African banks, facilitating the build-up of financial fragility. In aggregate, non-financial companies raise much of their external finance through equity issuance. In order to balance the sum of their equity and liabilities, non-financial firms hold liquid assets. This is the most effective way to avoid an evaporation of assets on their balance sheets because cash and cash equivalents, unlike machinery investment, will not dramatically lose in value during a recession. In South Africa, these corporations invest into financial assets that in turn become liabilities for domestic banks.

Banks are then under pressure to generate assets matching their liabilities. This happens mainly in the form of mortgage lending and credit extended to the FIRE sector. Bank credit flowing into the real estate market substantially inflated house prices during the early 2000s. Therefore, non-financial companies' liquidity preference might have contributed to the house price boom in South Africa.

This result crucially depends on South Africa's status as emerging market. The author does not subscribe to the loanable funds model, where creation of loans is only possible if deposited savings increase. This thesis firmly stands with the concept of endogenous money, acknowledging that loans create deposits. However, as argued by Victoria Chick in her influential stages of banking evolution (see chapter 5), for reserves not to be a constraint on credit creation *at all* the central bank needs to accept full responsibility for financial stability. This goes hand-in-hand with a stable and *low* interest rate policy (Chick, 1992). Since there is no commitment of the SARB to a policy of *low* interest rates. In South Africa interest rates are relatively high and often driven by portfolio inflow considerations, especially since the mid-1990s when the country became the

IMF's poster child of 'prudent'[5] macroeconomic policies. Thus, in this situation corporate liquidity on bank balance sheets can facilitate credit creation. It practically pressures South African banks to extent credit because the large domestic banks still follow a business model that relies on loans as main asset on their balance sheet. Fee generating services and more financially innovative instruments (also created for a fee) have not been an important source of profit for South African banks.[6]

Therefore, the agency question is answered in favour of non-financial corporations. While South Africa has some very specific political and socio-economic characteristics, the observations above can be lessons for other resource-rich emerging markets, attempting to deepen their financial markets.

1.6. Research limitations

This research could not reach the level of detail it had aimed for is with respect to firm heterogeneity. Ideally, flow of funds data should distinguish between large corporations and SMEs. This was a proclaimed aim of the old institutionalist economists who first pioneered the construction of this type of data. As stressed by Kalecki, and Kaleckian economists such as Steindl, non-financial businesses behave differently depending on their size, volume of liquid assets and competitive strategy (to single out a few important aspects). In the case of South Africa, as in many developing and emerging economies, the existence of non-incorporated businesses is important. Almost by definition, there are no comprehensive data on non-incorporated firms, and they typically figure as part of the household sector. Thus, the results arrived at in this thesis have to be seen against the background of this caveat.

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[5] In the global context, this refers to the country's efforts to liberalise trade and the financial markets, while domestically focusing on public debt reduction, conservative budgeting and inflation targeting. The latter policies resulted in 'ridiculously high interest rates' (Bond, 2005, p. 98).

[6] See Rodrigues Teles Sampaio, 2012 for a detailed discussion of the absence of convincing signs of financialisation among South African banks.

1.7. Originality

The originality of the thesis lies in its contribution to the understanding of the variety and heterogeneity of the processes behind financial operations of non-financial firms, and their impact on the economy as a whole. Concretely, the research reveals the changing nature of financial operations among non-financial firms in South Africa since the 1970s. While the thesis agrees with the heterodox view that changes in financial activity of South African non-financial corporations have had an adverse effect on financial stability and job creation, it challenges the view that non-financial firms have simply engage in more financial speculation, which undermines productive investment, growth and job creation (Marais, 2011, Ashman & Fine, 2013). Thus, the thesis sheds light on the processes underlying these changes in financial operations, highlighting the channels that brought about financial fragility while undermining economic activity.

The thesis provides an original application of the theory of capital market inflation and in particular the related concept of overcapitalisation to an emerging market economy. The thesis operationalizes the concept of overcapitalisation by developing a financial ratio to detect it. Furthermore, the author constructed an original dataset by gathering detailed qualitative and quantitative information on 132 South African non-financial corporations identified as overcapitalised. The developed comprehensive balance sheet approach is combined with an original adaptation of the Corbett and Jenkinson (1996, 1997) methodology, to provide a macroeconomic assessment of non-financial firms' liquidity holdings and their impact on financial stability. Crucially, the thesis has created an original dataset of non-financial JSE-listed companies with high liquidity preferences. The dataset covers a large range of qualitative characteristics and was laboriously assembled using a comprehensive balance sheet approach.

Chapter II: Literature Review: Financial Operations of Non-Financial Firms

This chapter reviews the most salient and interesting contributions to economic thought that deal with financial operations of non-financial companies. Since non-financial enterprises are essential to economic activity any economic theory is built on certain assumptions about what these firms do, how they use finance and how they generate profit. Depending on the theory, these assumptions are either more or less explicit. In the following, the most important economic theories and models, which have had the most influence on economists' understanding of non-financial firms' financial operations, are discussed.

The empirical (and topical) puzzle of increasing cash and cash equivalents holdings[1] on non-financial firms' balance sheets will serve as analytical angle to reveal underlying theoretical assumptions. Thus, three questions will guide this literature review: (1) what is the role of financial operations within the operations of non-financial businesses? (2) Which non-financial businesses are assumed to undertake financial operations? And (3) why might non-financial firms increase their holdings of liquid assets (such as cash and cash equivalents)?

Different theories of the firm will be touched upon. However, it is not the nature of the firm that is at the analytical centre of this overview, but the theoretical understanding of non-financial businesses' financial operations. The reader will notice that more attention is given to heterodox theory in the discussion below. This is somewhat inevitable when dealing with financial

[1] The terms 'cash and cash equivalents' or 'cash holdings' refer to cash in call deposits and other short-term, highly-liquid investments that are readily convertible to known amounts of cash, meaning that there is insignificant risk of change in value due to a change in the interest rate. Short-term refers to a time period of three months or less

operations of non-financial business since heterodox economists tend to assign greater importance to financial phenomena.

Orthodox economists turn most often to corporate finance theory for an understanding of financial dealings within non-financial firms. Part 2.1.1. will review the emergence of corporate finance as a sub-discipline. This will be followed by a discussion of the Modigliani-Miller theorem and its importance for mainstream analysis of corporate financial operations (part 2.1.2.). Finally, recent empirical findings, dealing with the puzzling increase in non-financial firms' increasing liquid asset holdings will be reviewed in Part 2.1.3.

Heterodox economists have been particularly influenced by Karl Marx and John Maynard Keynes in their theoretical understanding of non-financial firms' financial transactions. These two writers and their influence on finance theory (and especially, ideas on financial dealings of non-financial business) will be discussed in turn (in parts 2.2.1. and 2.2.2., respectively). In recent years, the heterodox research agenda around financial phenomena has culminated in a diverse body of research labelled as 'financialisation' theories, shaped by the ideas of both Marx and Keynes. They will be reviewed in part 2.2.3., specifically with regard to financial operations of non-financial companies.

2.1. Financial operations of non-financial firms in mainstream economics

2.1.1. The emergence of corporate finance theory

Corporate finance theory is the area of orthodox economic thought that deals with financial transactions of non-financial firms. It is a relatively young economic sub-discipline, which mostly developed during the second half of the 20th century, aiming mainly to assess the value of corporate financial instruments using increasingly sophisticated statistical tools. This section will trace the emergence of corporate finance theory since the history of the discipline's formation will help answering the questions (1) what role financial operations are assumed to play in non-financial businesses, (2) which firms are

considered to undertake these operations and finally, (3) why non-financial firms might have raised their liquid asset holdings.

The financial transactions of the non-financial corporation were important in early financial thought, mainly through analyses of stock prices and exchanges, going as far back as to the 17th century.[2] The first company stocks were shares of a chartered company – namely the Dutch East India Company – and started trading in 1602 (Poitras, 2007). Not entirely incidentally, it was the Dutch East India Company, which established the first colonial outpost in South Africa, Cape Town, in 1652. The early financial history of Cape Town and the city's interaction with the Dutch East India Company are discussed in detail in chapter 6.

During the 17th and 18th century joint stock companies were chartered only by act of parliament and few of them existed. In fact, financial markets and the activities of banks mainly dealt with government securities (for instance, to finance war expenditure) rather than with company stock (Kindleberger, 1984). This changed with the advent of limited liability legislation, which in Britain was put into effect in the mid-19th century. As consequence, it became much easier to establish joint stock companies and their shares were more widely traded.[3] In fact, the 19th century was characterised by re-occurring stock exchange booms across Europe.

Unsurprisingly, strong interest in the stock exchange and especially in equity investment emerged. The aim of the equity investor was to maximise his or her profit, choosing a portfolio of shares that were generally regarded as undervalued. Risk management (which is nowadays regarded to be a major function of financial institutions) did not figure in portfolio choice techniques of the 19th and early 20th century.

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[2] Financial analysis itself can be traced as far back as antiquity (Poitras, 2006).

[3] In the UK, the Joint Stock Companies Act was passed in 1844, the Limited Liability Act in 1855.

Irving Fisher's maximisation rule in his separation theorem, stating that the income generated by an investment decision and its shape over time can be disentangled (Fisher, 1930). Consequently, followers of Fisher, such as John Burr Williams, advised the rational financial investor to invest in the security with the highest expected return since inter-temporal consumption and saving decisions could generate the desired shape of the cash flow over time (Dimand, 2007). During the 1930s, despite the still-fresh memory of the 1929 crash, such techniques of portfolio investment were common. Keynes famously stated in a letter to a business associate that:

> '[…] the right method in investments is to put fairly large sums into enterprises which one thinks one knows something about and in management of which one thoroughly believes. It is a mistake to think that one limits one's risks by spreading too much between enterprises about which one knows little and has no special reason for special confidence. One's knowledge and experience is definitely limited and there are seldom more than two or three enterprises at any given time which I personally feel myself entitled to put full confidence' (Keynes, 1934).

This attitude towards financial investment, which is the basis of traditional portfolio choice techniques, is tainted by the expectation of ever-increasing stock prices. In such a situation the investor has to find the most undervalued security and simply wait. Irving Fisher shared this expectation, remaining convinced that the Great Crash of 1929 was just a temporary phenomenon, and anticipating the resumption of price levels and growth (Dimand, 2007).

It was this attitude, but even more so the 'traditional' techniques, with which corporate finance theory wanted to break (Poitras, 2007). The emergence of the sub-discipline within economics was fuelled by two trends: first, the progress in probability theory of the late 19th and early 20th century (Jovanovic, 2007); and second, the contracting volume of government bonds available in advanced financial markets, resulting from the pronounced reduction in government debt after World War II (Toporowski, 2010).

The first development coincided with a general shift of economic method since the late 19th century, towards more usage of econometric techniques, promoted

as more scientific. Harry Markowitz's PhD thesis on the theory of portfolio selection was instrumental in the assault on 'traditional' finance and is generally seen as beginning of corporate finance theory (Mehrling, 2005, Jovanovic, 2007).

Markowitz explicitly attacked Williams's investment proposition, according to which investors should focus on those shares that are expected to fetch the highest returns (Markowitz, 1952). While Fisher's separation theorem was an exposition of investment decisions under certainty, in line with his expectations about stock price growth, Markowitz introduced statistical risk, while claiming to include uncertainty. Of course, his means-variance model does not incorporate uncertainty but rather risk, since changes in security prices are treated like dice throws, that is like random variables. In the mean-variance portfolio investment model investors aim at reducing fluctuations in expected return (the variance) through security diversification given a certain level of average expected return (the mean).

Markowitz's mean-variance model crystallised the results of more than 20 years of statistical analysis applied to financial market observations. Work on stock market prices had started developing using econometric techniques since the 1930s. Alfred Cowles established the Cowles Commission in 1931 to research the stock exchange. Cowles was a 'victim' of the 1929 crash and believed that it could not have been predicted. Out of this research, the random walk hypothesis developed, independently from earlier work by Jules Regnault and Louise Bachelier (Jovanovic, 2007).

Already in the late 19th century, Regnault and Bachelier showed that developments in stock prices could be described by Brownian motion (Poitras, 2006), meaning their price changes over time can be mathematically formalised as a motion consisting of successively random but calculable steps like the throwing of dice, that is, a so-called random walk.

This finding was reinforced decades later, first by Holbrook Working during the 1930s, and subsequently during the 1950s by Maurice G. Kendall, and M. F. M. Osborne, who, without the knowledge of the preceding results, once again demonstrated that stock (and commodity) price changes behave like a random walk (Mehrling, 2005). Bachelier's work, written in 1900, was only rediscovered and popularised by Paul Samuelson in 1950, contributing to the then nascent economic subfield of corporate finance theory (Poitras, 2006, Jovanovic, 2007). The aim of the new subdiscipline was establishing so-called mathematical rigour while discrediting 'traditional' securities analysis as non-scientific and 'based on accounting practices, rules of thumb and anecdotes' (Merton, 1987, p. 150).

Therefore, this research agenda was little more than the application of new statistical and mathematical tools to financial market observations. The theoretical foundations of Markowitz's model were so weak that Milton Friedman initially refused to award him a doctorate in economics:

> 'Harry, I don't see anything wrong with the math here, but I have a problem. This isn't a dissertation in economics, and we can't give you a Ph.D. in economics for a dissertation that's not economics. It's not math, it's not economics, it's not even business administration' (quoted in Bernstein, 1992, p. 60).

Thus, the aim of corporate finance theory – with few exceptions – was not to understand companies' financial decisions, but to be able to assess the value of financial investment into corporate equity. As a consequence, the main aspect of corporate activity, which is of interest to corporate finance theory, is the issuance of stocks and bonds (Varian, 1993). [4] Implicitly, non-financial corporations were simply assumed to use the funds raised for productive operations. This provides an answer to question (2). The type of firm which was in the research focus was the equity- and bond-emitting business, hence, the large listed corporation.

[4] According to Hal Varian, '[c]orporate finance focuses on the suppliers of the securities – the corporations that issue stocks and bonds' (Varian, 1993, p. 166).

This is in line with the second trend outlined above that substantially contributed to the rise of corporate finance theory as independent economic field: need of investors to make more extensive use of private securities, such as corporate equity, in the wake of falling public bond issuance and government debt repayment after World War II. While the demand for financial instruments with low levels of risk was increasing, the supply of government bonds, typically perceived to be the safest type of financial asset, was declining. Consequently, corporate finance theory was providing a theoretical (and allegedly scientific) foundation for encouraging investment in corporate equity, which is generally more risky than government debt (Toporowski, 2010).

2.1.2. The Modigliani-Miller theorem

Lacking theoretical foundations, portfolio models (like the one put forward by Markowitz) were absorbed into the increasingly dominant general equilibrium framework. This might seem surprising since Kenneth Arrow and Gérard Debreu (1954) formulated their proof of equilibrium for a competitive economy on the assumption of perfect markets, including those for future goods and services. Consequently, their general equilibrium model is one of perfect foresight and therefore closely related to Irving Fisher's (1930) expositions, much criticised by corporate finance theorists for the assumption of certainty.

Nevertheless, financial economists never considered true uncertainty, replacing it instead with risk. Unlike uncertainty, which is inherently unknowable, risk follows a random but predetermined distribution with outcomes of quantifiable probabilities. Modigliani & Miller (1958) provided the theoretical grounds to put corporate finance theory onto general equilibrium foundations (Jovanovic, 2007). In their paper on the irrelevance theorem they argue that firms' financing decisions do not affect their value. Otherwise, investors would take advantage of arbitrage opportunities between two identical firms simply differing in capital structure. This claim relies on the assumption of a perfect capital market

where all arbitrage possibilities are exhausted, leaving company profit determined by its industrial and commercial activity (Toporowski, 2010).

Notably, it was Modigliani who mathematically arrived at the conclusion that the capital structure of a company – meaning the firm's choice between equity and debt held on the balance sheet – did not impact its value. Doubtful of this result, he had to be convinced by Miller that this was a reasonable argument (Mehrling, 2005).

However, the irrelevance theorem relies on the assumption of efficient market workings in the absence of frictions such as taxes, transaction costs and asymmetric information. Given a perfectly functioning market there is however little need for a firm's cash holdings since – at the extreme, namely in the Arrow and Debreu (1954) setting – the company can prepare for future transactions as perfect foresight is implied. Hence, under these conditions there is no explanation for corporate cash holdings, and in fact the company's asset side in general does not figure prominently in early corporate finance theory.

Modigliani's initial doubts about the findings were echoed by fellow corporate finance researchers such as John Lintner and his colleagues at other Boston-based universities especially Edwin Kuh and John R. Meyer who criticised the Modigliani-Miller theorem for its restrictive assumptions, abstracting from risk in the general equilibrium framework. From field research and interviews with managers and shareholders Lintner knew that both paid a lot of attention to financing decisions (Mehrling, 2005). Furthermore, Lintner was familiar with William Henry Locke Anderson's work on corporate finance (Lintner, 1967), which dealt with balance sheet analysis, guided by Michał Kalecki's principle of increasing risk (Locke Anderson, 1964). The implications of the 'principle of increasing risk' negate the capital structure irrelevance theorem, since it asserted that company value would be impacted adversely by rising leverage.

Modigliani and Miller acknowledged the excessively restrictive assumptions of their analysis, reconsidering the irrelevance theorem in 1963. In their opinion,

however, the most important shortcoming was the absence of tax breaks. Allowing for a corporate tax shield on debt-financed investment, their conclusion was that the value of a leveraged firm would exceed that of a non-leveraged company by the present value of the tax shield (Modigliani & Miller, 1963). By extension, firms with high levels of liquidity on their balance sheets must be holding cash and other liquid assets because the tax rebates they receive from borrowing are so advantageous that it pays to simply borrow money and hold it in liquid assets. This is called the tax motive for cash holdings.

For the US, Foley, Hartzell, Titman, and Twite (2007) present some evidence that corporations, which would face taxation after repatriation of foreign earnings, hold higher volumes of cash and cash equivalents. This does not appear to explain the whole story, however, as US corporations without foreign operations have also increased their cash holdings (Bates et al., 2009).

More fundamentally, considering the complex incorporation structure of modern listed companies it can be doubted that (changes to) tax shields can explain the rise in non-financial firms' liquid holdings. Large non-financial corporations have often holding companies that are based in low-tax centres (most prominently the Channel Islands, Jersey, the Cayman Islands, Bermuda, the Virgin Islands, Singapore and Switzerland). Complex financial transactions within the corporate group then allow such structures to minimise tax payments (Palan, 2012, Donne, 2013). Surely, the ability of these companies to avoid taxation has increased over the past decades. However, it is unlikely to have increased so dramatically that it can easily account for the important rise in liquidity preference among non-financial corporations.

The unrealistic, but logical, consequence of Modigliani and Miller's revised findings was that companies should finance their investment completely out of debt. Since this was far from corporate reality the research agenda over the coming years was importantly influenced by the need to find costs

counteracting the tax shield's benefits, determining an optimal debt level for companies, which would be below 100%-debt-financing.

In consequence, the static trade-off hypothesis emerged, putting forward the following argument: there is an optimal level of debt for a firm, determined by the trade-off between the costs and the benefits of borrowing external funds. The company benefits from the tax shield, while bankruptcy and financial embarrassment are potential borrowing costs. Therefore, debt financing is expected up to the point where company value is maximised and costs and benefits balance each other (S. C. Myers, 1984).

Based on empirical evidence it was understood that corporations were not indifferent between debt and equity financing and in fact preferred a third option: internal finance (see, for instance, Donaldson, 1961). The more realistic pecking order hypothesis (or financial hierarchy hypothesis) became the rival approach. The pecking order for investment finance by corporations was thought to be internal financing over debt, with equity issuance only as last resort (S. C. Myers, 1984). Here, non-financial firms hold on to cash to avoid either foregoing future investment opportunities or being forced to finance these externally.

2.1.3. Asymmetric information

Neither the static trade-off hypothesis nor the pecking order hypothesis has a strong theoretical anchor within orthodox theory.[5] In fact, neither theory is much interested in firms' assets or the corporate balance sheet. Both hypotheses understand firms' investment projects and assets as given (Myers, 1984). However, the pecking order hypothesis can be neatly integrated with the concept of asymmetric information, which became popular as part of the

[5] Miller himself acknowledged that there was no way to determine the optimal capital structure of a firm (Fama & Miller, 1972). Myers used to 'ignore the pecking order story because [he] could think of no theoretical foundation for it that would fit in with the theory of modern finance' (Myers, 1984, p. 582).

market failure analysis promoted with the rise of New Keynesian ideas during the 1980s (for example Greenwald, Stiglitz, & Weiss, 1984).

Acknowledging that managers possess information about their business, which is superior to the information held by equity investors, it was argued that investors would see share issuance as 'bad news'. Generally, so the argument, managers would avoid issuing new shares to prevent undervaluation of new stocks at the expenses of existing shareholders. Therefore, if managers were willing to issue shares, this had to mean their financial position was in distress (S. Myers & Majluf, 1984). The rational financial investor knew this, making him less willing to purchase newly issued stocks, which then in fact results – like a self-fulfilling prophecy – in an undervaluation of emitted shares.

The story about asymmetric information between managers and shareholders can be given a slightly different twist, resulting in another corporate finance-cum-New Keynesian market frictions explanation for different capital structures across firms: the principle-agent problem. Managerial theories of the firm at the time were focusing on the question to what extent managerially-run firm could pursue goals that differed from short-term profit maximisation. In this context, the principle-agent problem stresses the (by no means new) observation that the development of large capitalist firms was supported by the separation of ownership and control with the emergence of the joint-stock company. Within corporate finance theory, proponents of this type of managerial theories of the firm (Jensen & Meckling, 1976) often refer to work by old US American institutionalists, such as Adolf A. Berle and Gardiner C. Means, as their precursors.

The aforementioned managerial theories of the firm are based on the idea that interests of managers and shareholder are significantly misaligned, giving rise to an agency problem. While shareholders (the ultimate owners of the corporation) simply care about their profits, managers (executive employees) have a wider range of goals going beyond profit maximisation. These can

include large and impressive business headquarters, comfortable business travel or attractive office staff according to Jensen & Meckling (1976).

From the perspective of shareholders, the managers' resource allocation is potentially wasteful but they cannot control and discipline managers. The pecking order hypothesis is in line with managers' financing preferences since internal funds will always be favoured for investment projects because they preclude external control and interference with managerial decisions. Furthermore, if managers' and shareholders' interests are poorly aligned – so the argument – managers would rather retain cash than pay it out to shareholders, if the company has a poor investment perspective (Jensen, 1986). This is the agency motive to hold cash.

Empirically, the agency motive does not seem to play a prominent role in explaining cash hoarding among US firms. Harford, Mansi, & Maxwell (2008) show that weak control of corporate managers might lead to temporary excess liquidity, which is, however, spent quickly. They argue that, in actual fact, firms with agency problems hold low volumes of cash and cash equivalents. Bates, Kahle, & Stulz (2009) test different indicators for the agency problem (for instance managerial entrenchment, value of increasing cash holdings, link between current and future levels of cash holdings), and find that the behaviour of US corporations in their sample (covering 1980 to 2006) is inconsistent with the argument.

Once economists allowed for asymmetric information, the idea of an imperfect capital market was introduced. In contrast to the Arrow-Debreu setting, firms do not possess perfect access to capital markets, in the sense that all investment projects with a positive net present value can secure external financing. Firms can be financially constrained, being forced to forego profitable investment opportunities, because of a lack of internal and inaccessible external financial funds. The idea that at least some companies are financially constrained brings

up the transaction and the precautionary motives to hold cash and their equivalents.

Both motives were initially introduced in John Maynard Keynes's exposition of his theory of liquidity preference (Keynes, 1936). This theory predicts that under uncertainty[6] individuals will hold on to cash and cash equivalents in order to pay for transactions (transaction motive), meet unexpected expenses (precautionary motive) and speculate (speculative motive).[7] Within corporate finance theory the transaction motive is in fact a transaction cost motive (Baumol, 1952, Miller & Orr, 1966), which stresses the cost of illiquidity for firms under pressure to meet payment obligations. Selling off company assets to address unexpected expenditure might be costly for a firm since it will be forced to accept the best available price at that moment. The precautionary motive predicts that non-financial corporations will hold cash to ensure future investment opportunities are not foregone due to a lack of internal finance and/or an external financing constraint (Opler, Pinkowitz, Stulz, & Williamson, 1997).

The speculative motive however – the most prominent of Keynes's liquidity motives (Bibow, 2005) – is typically left aside when looking for theoretical explanations for empirical findings on corporate cash holdings. The few authors who do refer to a speculative demand for corporate liquidity (see Shah, 2011 and Kim, Mauer, & Sherman, 1998) tend to conflate the transaction and the precautionary motive so that the speculative motive then becomes what is typically interpreted as precautionary motivation to hold cash. In consequence, a company holding cash for future investment opportunities is seen motivated by speculation instead of precaution.

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[6] On uncertainty and the difference between uncertainty and risk see Frank Knight (1921) and Keynes (1936). Furthermore, the information asymmetry paradigm could be seen as related to uncertainty (Fazzari & Variato, 1994).

[7] This is somewhat problematic in itself because it assumes that firms and individuals are interchangeable while companies are in fact complex institutions.

Importantly, all the orthodox models presented here assume that investment by non-financial firms is always of a productive nature, excluding the possibility that non-financial corporations derive significant profits from their financial operations. In this sense, corporate investment decisions, and the asset side of the balance sheet more generally, has for long been taken as given (see Myers, 1984).

2.1.4. Empirical findings on corporate cash holdings

Recently, the phenomenon of rising corporate cash holdings has attracted some attention to the asset side of the corporate balance sheet. Nevertheless, it seems there is little coherent economic theory and too many different models to guide this interest, resulting in varying and often conflicting empirical findings. Table 2.1. summarises the most salient recent findings on the reasons for corporate cash holdings. It lists the variables that were found to have an impact on cash holdings by non-financial firm, and the sign of the effect. The empirical research agenda attempts to adopt the motives for non-financial firms' liquidity preference motives outlined in sections 2.1.1. to 2.1.3., namely the tax motive, the agency motive, the transaction motive and the precautionary motive. The latter motive in particular has attracted much attention and confirmation within this strand of the literature.

Thus, Dhaliwal, Huang, Moser, & Pereira (2011) construct a tax avoidance measure to test for the impact of the tax motive of cash holdings. Bates, Kahle, & Stulz (2009) and Almeida, Campello, & Weisbach (2002), both test for agency problems, with divergent results. The agency problem is often interpreted as more severe where corporate governance (and consequently, the protection of shareholders) is weak. Dittmar, Mahrt-Smith & Servaes (2003) find that weak governance increases non-financial firms' cash holdings. Similarly, Ozkan & Ozkan (2004) argue that strong ownership rights reduce corporate cash holdings, while Harford, Mansi, & Maxwell (2008) arrive at the opposite result.

The transaction motive would suggest that firm size has a positive impact on corporate cash holdings, since larger operations might necessitate larger volumes of liquidity. Firm size is, however, found to have a varying effect on holdings of cash and cash equivalents, from reducing cash holdings (see Bigelli & Sanchez-Vidal, 2011 or Iskandar-Datta & Jia, 2011) to increasing them (see Shah, 2011) to not having any significant impact at all (see Kim et al., 1998). In a sample for almost 2000 non-financial firms from Brazil, Russia, India and China (BRICs) covering the years 2002 to 2008, Al-Najjar (2013) found all three effects of firm size on cash holdings depending on the country. The precautionary motive has attracted a range of different interpretations: cash flow and its volatility, expenditure on research and development (R&D), credit spreads and cost of borrowing, leverage, debt maturity and credit ratings have all been used as proxies for the level of risk a company might face in its operations. Hence, the presence of these factors might necessitate precautionary cash holdings. Some authors also include industry and macroeconomic 'uncertainty'[8] in this category.

Most of these variables have the expected signs when testing for their impact: Cash flow volatility raises cash holdings (Opler, Pinkowitz, Stulz, & Williamson, 1997; Kim, Mauer, & Sherman, 1998; Bates et al., 2009; Iskandar-Datta & Jia, 2011); so does R&D expenditure (Bates et al., 2009; Iskandar-Datta & Jia, 2011), credit spreads (Acharya, Davydenko, & Strebulaev, 2012) and other measures of cost of external finance (Kim et al., 1998) as well as industry and macroeconomic 'uncertainty' (for industry level: Baum, Schäfer, & Talavera, 2007, for macro level: Álvarez, Sagner, & Valdivia, 2012).

[8] They mostly include risk rather than uncertainty, quantifying, for instance, output volatility.

Table 2.1. Cash holdings by non-financial firms in empirical analysis

Author(s), Year, and Title	Economic variables with a positive, negative or undetermined impact on cash holdings (+, -, ..)
Al-Najjar, Basil (2013): *The financial determinants of corporate cash holdings: Evidence from some emerging markets*	Dividend pay-outs (-), leverage (-), profitability (-), size (+, -, ..)
Acharaya, Viral Davydenko, Sergei A. and Ilaya A. Strebulaev (2012): *Cash holdings and credit risk*	Credit spreads (+)
Iskandar-Datta, Mai E. and Yonghong Jia (2012): *Cross-country analysis of secular cash trends*	Cash flow volatility (+), dividend pay-out (+/-/..), investment (-), leverage(-), market-to-book value (+), research and development (R&D, +), size (-/..), working capital (-)
Anderson, Ronald W. and Andrew Carverhill (2011): *Corporate liquidity and capital structure*	Long-term average of cash holdings (-), profitability (..)
Bigelli, Marco and Javier Sanchez-Vidal (2011): *Cash holdings in private firms*	Cash conversion cycle (+), dividend pay-outs (+), financing deficit (-), firm age (-), investment in the medium run (+), profitability (+), size (-)
Dhaliwal, Dan S., Huang, Shawn X. Moser, William and Raynoldes Pereira (2011): *Corporate Tax Avoidance and the Level and Valuation of Firm Cash Holdings*	Tax avoidance (-)
Lee, Bong Soo and Jungwon Suh (2011): *Cash holdings and share purchases: International evidence*	Investment (-), equity repurchases (+)
Shah, Attaullah (2011): *The corporate cash holdings: Determinants and implications*	Cash flow (+), conversion cycle (+), debt maturity (-), dividend pay-out (+), market-to-book value (+), size (+)
Alvarez, Roberto, Sagner, Andres and Carla Valdivia (2010): *Liquidity crises and corporate cash holdings in Chile*	Macroeconomic uncertainty/ liquidity crises (-)
Bates, Thomas W., Kahle, Kathleen M. and René M. Stulz (2009): *Why do US firms hold so much more cash than they used to?*	Agency conflict (..), cash flow volatility (+), R&D (+)
Harford, Jarrad, Mansi, Sattar A. and William F. Maxwell (2008): *Corporate governance and firm cash holdings in the US*	Weak governance (-)
Baum, Christopher F., Schäfer, Dorothea and Oleksandr Talavera (2006): *The effects of industry-level uncertainty on cash holdings: The case of Germany*	Cash holdings in previous year (+), industry uncertainty (+), investment (-)
Khurana, Inder K., Martin, Xiumin and Raynolde Pereira (2006): *Financial development and the cash flow sensitivity of cash*	Level of financial development has a (-) effect on changes in cash holdings, that is the more developed the financial market the less sensitive cash holdings are to changes in cash flow.
Ozkan, Aydin and Neslihan Ozkan (2004): *Corporate cash holdings: An empirical investigation of UK companies*	Bank debt (-), cash flow (+), leverage (-), liquidity of other assets (-), market-to-book value (+), strong ownership rights (-) implying: agency conflict (+)
Dittmar, Amy, Mahrt-Smith, Jan and Henri Servaes (2003): *International corporate governance and corporate cash holdings*	Protection of shareholder rights (-), this effect is strengthened in countries with less developed capital markets, implying: financial development (-)
Almeida, Heitor, Campello, Muriello and Michael S. Weisbach (2002): *Corporate demand for liquidity*	Agency problems (+), financial constraints (+),
Opler, Tim, Pinkowitz, Lee Stulz, René and Rohan Williamson (1999): *The determinants and implications of corporate cash holdings*	Cash flow volatility (+), credit ratings (-), market-to-book value (+)
Kim, Chang-Soo, Mauer, David C. and Ann E. Sherman (1998): *The determinants of corporate liquidity: Theory and evidence*	Cash flow volatility (+), cost of external financing (+), difference in return on physical and liquid assets (-), market-to-book value (+), size (..)

Conversely, longer debt maturity (Shah, 2011) and better credit ratings (Opler et al., 1997) are found to reduce cash holdings. However, it is not quite clear why higher leverage should not also result in precautionary cash holdings (Al-Najjar, 2013) or why higher financial deficits should necessarily lead to lower (Bigelli & Sánchez-Vidal, 2012) rather than higher cash holdings out of precaution, except if high debt levels are assumed to absorb additional cash flow in an attempt to pay off debt (see Ozkan & Ozkan, 2004). Bringing in the emerging market perspective, the argument is often made that corporate cash holdings would be smaller in countries with more developed financial markets (Khurana, Martin, & Pereira, 2006) and better investor protection (Dittmar et al., 2003). Thus, cash 'hoards' are arguably a sign of under-development. Interestingly, as will be discussed in part 2.2.1., Rudolf Hilferding, a Marxist economist of the early 20th century would have made the same argument. Despite these eclectic findings the precautionary motive appears to dominate empirical findings.

The empirical corporate finance literature has substantial drawbacks. What these studies fail to show is an understanding of financial operations within non-financial firms, especially with a view towards the underlying processes and decisions taken. Firm heterogeneity is rarely considered and if it is then firm size or age are used as distinguishing characteristics. Few of the above-listed empirical studies deal with the changing nature of corporate financial operations. Only Bates et al. (2009) and Iskandar-Datta & Jia (2011) have addressed the phenomenon of secularly rising cash holdings among non-financial firms.

On a methodological level, there is no consensus on what measure of corporate liquidity to use: cash and cash equivalents as share of total assets, or rather cash and cash equivalents as share of net assets. While the first measure simply states the volume of highly liquid assets to total assets, the second accounts for corporate leverage, deducting total firm debt from total assets to arrive at the

net asset position. Interestingly, in accounting and business practice neither of the two is a much-used liquidity ratio. More popular are cash and quick ratios, which will be discussed and advocated as superior measures of firm liquidity in chapter 3.

By way of summary of the corporate finance literature and its theoretical and empirical insights on financial operations of non-financial businesses, the three questions about (1) the role of financial operations in the dealings of non-financial business, (2) what type of firms are considered and (3) why the holdings of liquid assets by non-financial corporations would rise, can now be revisited:

(1) Corporate finance theory analyses the position of large listed companies in financial markets from the perspective of private (institutional) investors.[9] Consequently, little insight on how firms' actual financial operations are provided. The Modigliani-Miller (1958) theorem makes financial structures irrelevant to the true value of a firm, marginalising the importance of decisions about debt versus equity financing.

(2) With the exception of some empirical work, corporate finance theory focuses on the listed corporation, disregarding firm heterogeneity and especially small and medium enterprises, which in many countries provide the majority of employment.

(3) The question why non-financial corporations liquid asset holdings should rise can fetch a range of replies: due to the tax motive, the agency motive, the transaction motive, the precautionary motive and, very occasionally, the speculative motive. Importantly, within the empirical corporate finance literature the precautionary motive appears the dominant one.

[9] The fact that many of the early contributions to corporate finance theory came from practitioners (like the financial consultant Jack Treynor) or researchers at the intersection of academia and practical finance (such as Fischer Black and Myron Scholes) has most likely contributed to this focus (Mehrling, 2005).

Table 2.2. Summary of theoretical micro perspectives on finance, mainstream economics

	Role of financial operations of non-financial firms	Non-financial firms in analytical focus	Reason for rising liquidity holdings
	Mainstream economics		
Corporate finance-cum-general equilibrium	Support productive operations	Large listed corporations	Inconsistent with the theory
Corporate finance-cum-asymmetric information	Support productive operations	Large listed corporations	Tax motive, agency motive, transaction motive, **precautionary motive**, (speculative motive)

2.2. Heterodox approaches to corporate financial operations

This section provides an overview of the most important and relevant theoretical ideas on financial operations carried out by non-financial firms, and their purpose and importance, coming from heterodox economic thinkers. Among heterodox economists, the works of Karl Marx and John Maynard Keynes are typically seen as two sources of lasting influence. Hence, the ideas of these two thinkers serve as organising principle for this section. Finally, a third part (2.2.3.), deals with financial operations by non-financial businesses in the financialisation debate. The latter body of literature represents the most recent research on the changing nature of the modern financial system and, typically, combines influences of both Marx and Keynes. The classification of ideas and authors along these lines are, of course, merely a heuristic organisational device.

Thus, part 2.2.1. groups Marx's ideas and those by authors writing in a German-language tradition together for a review. Marx's ideas shaped much of continental European (and particularly German-language) economic theory subsequently. With respect to the specific issue of financial operations of non-financial firms, the works of Rudolf Hilferding who developed Marx's thought on finance (Argitis, Evans, Michell, & Toporowski, 2014), were especially influential. The works of Veblen, who is typically seen as the founding father of old US American institutionalist thought is also subsumed under this heading.

Subsequently, Keynes's and post-Keynesian ideas on financial operations of non-financial business is reviewed (in part 2.2.2.). Here the heuristic nature of the proposed classification of economic thought becomes apparent. Kalecki's ideas should be more adequately considered as distinct from post-Keynesian thought (see Lavoie, 2015). Nevertheless, many of Kalecki's ideas are commonly seen as part of the post-Keynesian school. To do Kalecki's thought justice, and rectify this fuzziness in classifications, his research is considered at some length. Since Kalecki's writing on finance is limited, the principles of his analysis is supplemented by ideas put forward in the Kaleckian tradition, most notably by Josef Steindl and Jan Toporowski. Hyman Minsky's work, whose understanding of the non-financial firm as a balance sheet will be central for the analysis in chapters 3 and 4, is also close to this tradition.

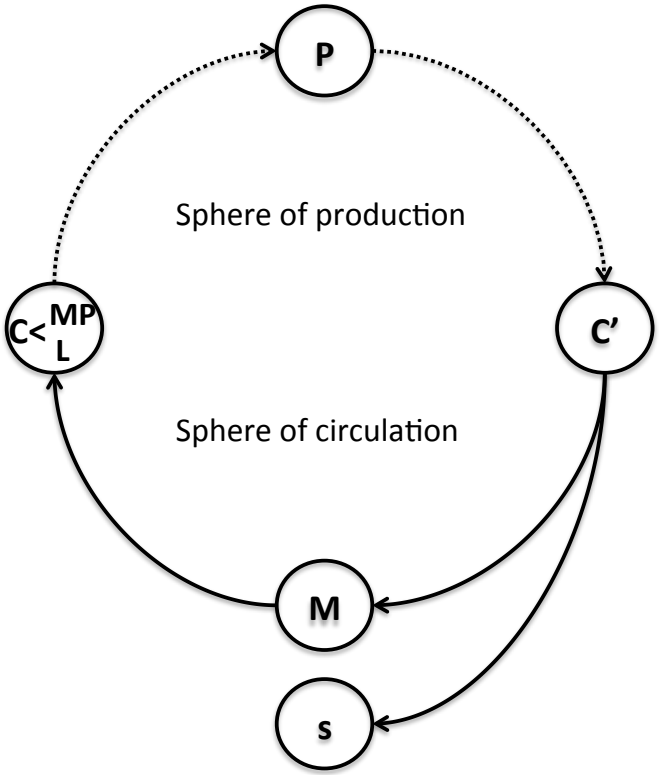
Finally, part 2.2.3. reviews financialisation approaches that can theoretically enlighten the understanding of non-financial business' financial operations. The thesis deliberately refers to financialisation 'approaches', since there are substantial variations and contradictions within this body of literature, making it a collection of different theoretical 'approaches' mostly in the Marxist and post-Keynesian traditions, rather than a unified theory. These differences become particularly visible with respect to the non-financial firm and its financial dealings.

2.2.1. Marx and the German-language economic tradition

Karl Marx and Friedrich Engels presented one of the first accounts of production by the industrial firm in a capitalist economy. Volume I of *Das Kapital* focused on many of the processes within the firm (such as the production of commodities, the creation of surplus labour, the determination of length of the work day and workers' wage), while the subsequent two volumes set out the macroeconomic system (including the financial system, in volume III), in which the capitalist non-financial firm operates (Marx & Engels, 2012[1885], Marx & Engels, 1996[1894])..

It is worthwhile to present Marx's economic ideas in somewhat more detail than would be strictly necessary to clarify his understanding of cash holdings within the non-financial firm, as especially his schemes of reproduction influenced heterodox economists well beyond the Marxist tradition. Marx's understanding of the economic system as a circular and continuous flow of money and commodities, that is the circuit of capital, reappears in the thinking of Keynes (1936) and, most importantly for this thesis, in that of Kalecki (1933). It is in volume II of *Das Kapital* where the capitalist – who owns and therefore represents the firm – is described operating in the sphere of production as well as the sphere of circulation, characterised by continuous circular money and commodity flows (see Figure 2.1.).

Figure 2.1. The circuit of capital (Fine & Saad-Filho, 2004, p. 55)



In production, inputs (C) – that is labour (L) and means of production (MP) – have to be combined to produce a commodity (C'), which then passes into circulation. Here, it has to be sold, in order for the capitalist to receive the

money (M) that cover his costs and realise surplus (s), in other word his (or her) profit. The capitalist either consumes or reinvests his profit (s) subsequently, which closes the circuit of money and commodity flows. The described order is by no means imperative.

Since this movement of capital is a true and continuous circle there is no beginning and no end. All productive capitalists face these considerations continuously and in a non-coordinated manner, making them a social class rather than independent individuals or representative agents as assumed in mainstream economics. If all capitalists consume their entire surplus the economic and social relations merely reproduce themselves in simple reproduction – this is somewhat similar, even though not in Marx's intention[10] (Fine & Saad-Filho, 2004), to the neoclassical steady state where only replacement investment is undertaken. If capitalists, however, reinvest some or all of their profits the economy grows under expanded reproduction.

In this setting, Marx described non-financial companies' cash holdings as 'money hoards' (Marx & Engels, 2012[1885], p. 47, p. 299; Marx & Engels, 1996[1894], pp. 210-212), 'reserve fund' (Marx & Engels, 2012[1885], p. 48; Marx & Engels, 1996[1894], pp. 211-212) or 'sinking fund' (Marx & Engels, 2012[1885], p. 69; Marx & Engels, 1996[1894], pp. 258-9). Hoarding can occur in both spheres and results from the circumstance that it is more important to sell than to buy (Marx & Engels, 2012[1885], p. 74), implying that buying is easier than selling. Arguably, there is a nucleus of the concept of liquidity preference in Marx's writings (Lapavitsas, 2000).

For Marx, hoards were both a sign of economic stagnation and a necessary corollary of capitalist production. If the above-described circuit of capital breaks down at any point a crisis emerges with money hoards and unsold commodity stocks as symptoms (Marx & Engels, 1996[1894], p. 29). Money then does not

[10] Marx's approach was dynamic and he would have, therefore, objected to equilibrium analysis.

flow (back) into production, because of the higher liquidity of money capital in comparison to commodity capital since buying is easier than selling. Thus money hoards in the sphere of circulation can be a sign of crisis.

On the contrary, hoarding is necessary for a smooth production process – at least in the absence of external funding. There are several reasons for the capitalist – or the non-financial firms – to hoard cash. When setting up an enterprise start-up funds are necessary. Capitalists must advance the money for labour and means of production at the beginning of a business venture. Hence, they have to pay wages and purchase machinery before making any profit from business operations. If the economic activity undertaken is very capital intensive the necessary money hoard might be a very large one.

However, over time this reason to hold cash should gradually dissipate as the firm is able to establish itself. This follows from Marx's exposition, which stresses the unity and continuity of capital in the production and circulation process (Marx & Engels, 1996[1894], p. 58). Capital flows through all stages of production and circulation concurrently. Hence, once the circuit is closed the company does not have to wait for its entire invested capital to progress linearly through every stage of production and circulation, only receiving revenue when the circuit is completed 'at a stroke' (Lapavitsas, 2000, p. 226). Firms' cash flow is typically a more or less continuous stream rather than a regularly erupting gush.

Importantly, Marx stressed that hoards would have to be accumulated over time, as latent money capital in sinking funds, to enable the renewal of large constant capital such as expensive specialised machines. The sinking fund, which is internal to the firm, functions as saving for future investing activity. Especially capital-intensive companies will have to accumulate capital gradually to be able to undertake investments in expensive machinery, which – it is implied – would have to be paid as a lump sum (Marx & Engels, 1996[1894], p. 44, p. 69, p. 107). In this sense, money hoards are indispensable

for the production process and particularly for expanded reproduction in Marx's schemes of reproduction.

This illustrates that the financial institutions present at his times did not provide long-term credit to non-financial firms (or industrial capitalists). In fact, funding, that is the granting of long-term credit from banks or capital markets particularly to manufacturing companies, only emerged during the second half of the 19th century in continental Europe. This important innovation in financial institutions will be discussed in detail in chapter 6.

Interestingly, in Marx's exposition industrial capitalists – and therefore non-financial firms – are exclusively investing in productive activities. It is other classes – such as monied capitalists – that engage in financial investment. This implicit assumption is shared by orthodox economists as described in the previous section. The important difference is, of course, that Marx developed his thought more than one hundred years ago while, since, mainstream modern-day economists do not seem to have transcended it.

Admittedly, Marx hinted at the possibility of financial profits generated by non-financial firms or – in his terms – industrial capitalists. Discussing the *Circuit of Productive Capital* in volume II (Marx & Engels, 1996[1894], p. 36), he elaborated on the accumulation of money hoards during the process. He acknowledged that in reality latent money capital did not have to exist as actual money hoard but could take varying forms:

> 'It may also exist in the form of a mere outstanding money, of claims on debtors by capitalists […]. As for other forms in which this latent money-capital may exist in the meantime even in the shape of money-breeding money, such as interest-bearing bank deposits, bills of exchange or securities of any description' (Marx & Engels, 1996[1894], p. 48).

Hence, without elaborating on it Marx introduced the possibility that money originating in the industrial circuit could perform 'special capital-functions outside of this circuit' (Marx & Engels, 1996[1894], p. 48). Generating financial

profits from liquid assets such as cash and cash equivalents might be such a function outside of the industrial circuit.

David Harvey (2013) argues that reading Marx's exposition of the circuit of capital (in volume II) in conjunction with volume III of *Das Kapital* would suggest that in an economy which possesses a sophisticated and functioning credit system these money hoards would be superfluous and in fact merely a symptom of crisis. This view was elaborated by Rudolf Hilferding (1947[1910]).

According to Hilferding, money hoards within companies should decrease with the emergence of a sophisticated financial system. Hilferding believed that hoards could be mobilised by capital markets and banks, that would transform this idle stock of money into productive capital faster than industrial capitalists could do so themselves. Thus, Hilferding arguably recognised the profound impact the development of capital markets and long-term industrial credit would have on economic activity (Kowalik, 2012; Argitis et al., 2014).

Hence, joint stock companies in particular would benefit from this mobilisation of money hoards since they have better access to bank credit and have the possibility to emit shares. For Hilferding (1947[1910]) this was the crucial characteristic of listed companies – the easy access to external funding, that is long-term credit – rather than the separation of ownership and control.

Importantly, in Germany of Hilferding's time large banks provided long-term credit[11] and also placed, for a fee, newly issued shares for listed companies. According to Hilferding, firms would become dependent on bank financing, over time increasing their debt levels, while banks would increasingly be involved in the ownership and control of large industrial firms. This mutual interdependence would result in the creation of so-called *finance capital*. *Finance capital* is capital at the disposal of, and controlled by, banks, but used by industrialists:

[11] Although potentially to a lesser extent than conventionally believed (see Deeg, 2003). This will be discussed in detail in chapter 6.

> 'Finanzkapital, Kapital in der Verfügung der Banken und in der Verwendung der Industriellen'[12] (Hilferding, 1947[1910], p. 306).

Following Marx, Hilferding assumes that non-financial corporations only engage in productive investment. In his view, share capital has no effect on the circuit of industrial capital, once it has been emitted. There is an implicit presumption in Hilferding's thinking that as economic structures develop, they become more efficient and rational. The joint stock company – for Hilferding – had the potential to overcome the limitations of personal property, leaving individual capitalists' interest behind and concentrating on technical and economic exigencies of the production process (Hilferding, 1947[1910]).

Similarly, financial speculation in the stock market would become less important as shares were mostly bought by banks which, given their close interrelation with industry, would have good knowledge about listed companies, reducing stock purchases out of speculation in future firm profits and dividends; for Hilferding, the main motivation behind financial speculation (Hilferding, 1947[1910]).

This attitude appears reminiscent of his German contemporary Max Weber. Weber (2012) understood capitalism as an economic system that favours the rational pursuit of economic gains, implying that institutions become increasingly rational and efficient as they develop. Consequently, Weber argued that financial speculation and arbitrage have a stabilising effect since they equalise price differences (Weber & Borchardt, 1999), which interestingly resonated later in the no arbitrage assumption of general equilibrium analysis.

Notably, these presumptions were in stark contrast to Marx's own assessment of joint-stock companies and stock exchanges. The separation of ownership and control heralded for Marx 'the abolition of the capitalist mode of production within the capitalist mode of production itself' (Marx & Engels, 1996[1894], p. 569) since the productive capitalist is transformed into a mere manager.

[12] The German original reads: 'Finance capital, capital at the disposal of banks and used by industrialists'.

> This transformation 'produces a new financial aristocracy, a new kind of parasite in the guise of company promoters, speculators and merely nominal directors; an entire system of swindling and cheating with respect to the promotion of companies, issues of shares and share dealings. It is private production unchecked by private ownership' (Marx & Engels, 1996[1894], p. 569).

Veblen (1904) also disagreed with the benevolent perception of stock markets and financial operations of firms as stabilising to the economy at large. For him, the separation of ownership and control had created a class of 'captains of finance' (Veblen, 1921), whose interests were neither aligned with society nor with the industrial firms they managed. They were managers of large listed industrial firms without any interest in, or knowledge of, the actual production process. Their main occupation was trading company shares of their own, but also of strategically associated, corporations in order to control industrial sectors with the ultimate aim of pecuniary gain:

> '… the interest of the managers, and of the owners for the time being, is to so manage the enterprise as to enable them to buy it up or to sell out as expeditiously and as advantageously as may be. The interest of the community at large demands industrial efficiency and serviceability of the product; while the business interest of the concern as such demands vendibility of the product; and the interest of those men who have the final discretion in the management of these corporate enterprises demands vendibility of the corporate capital' (Veblen, 1904, p. 50).

Implicitly, Veblen in fact described the process of balance sheet management, the buying and selling of financial assets rather than seeking to sell corporate output (Veblen, 1904). He stressed the interconnection of assets and liabilities, pointing out that company assets can be used as collateral to credit-finance further financial transactions of the firm. Crucially, Veblen stressed that credit raised against appreciating company assets would not be used to expand productive capacity but utilised for dealings in corporate capital, that is company stock (Veblen, 1904, Toporowski, 2005). Here his balance sheet analysis reveals some shortcomings. If companies obtain growing volumes of credit, which is not used for productive investment, where does that liquidity end up?

The expanding liability side must logically be balanced by ever-larger liquidity on the asset side of the corporate sectors' balance sheet (Toporowski, 2005). This systematic consideration is, however, missing from Veblen's exposition. Finally, his conclusions were similar to those of Hilferding. The 'captains of finance' would increasingly use bank credit to back their financial transactions, which would gradually transform them into 'lieutenants of finance' as they became progressively more dependent on banks (Veblen, 1921).

Thus, coming back to the three questions about (1) the role of financial operations among non-financial firms, (2) the type of companies considered and (3) the explanation for rising corporate holdings of liquid assets, the following answers can be given from a continental European perspective:

(1) In Marx's own and Marxist analysis financial operations of non-financial businesses mostly support their productive operations. Here, Veblen was an important dissenter, stressing that non-financial listed companies could make substantial financial profits through trade in company stock.

(2) While Marx's work explicitly dealt with competing capitals, that is, heterogeneous firms, Hilferding who chiefly developed Marx's thought on finance focused on the listed corporations. Similarly, Veblen focused on large listed companies when he described the financial transactions of the lieutenants of finance.

(3) In the Marxist framework, money hoards should become unnecessary for the purpose of production finance once long-term capital markets are in place. Hence, no explicit explanation of rising corporate liquidity holdings is offered, except in Veblen's work which alludes to financial speculation as reason.

Table 2.3. Summary theoretical micro perspective on finance, Marx & the German-language tradition

	Role of financial operations of non-financial firms	Non-financial firms in analytical focus	Reason for rising liquidity holdings
	Heterodox economics		
German-language tradition			
Marx	Support productive operations	Heterogeneous firms	Side effect of investment and sign of crisis
Hilferding	Support productive operations	Large listed corporations	Not consistent with sophisticated financial system
Veblen	Replace productive operations	Large listed corporations	Financial speculation

2.2.2. Keynes and post-Keynesian thought

As discussed in part 2.1.3. above, Keynes's influence reaches far beyond heterodox thought into mainstream economics. Dealing specifically with non-financial firms' cash holdings, Keynes's liquidity preference theory has been adopted by mainstream analysis. But Keynes did not develop his liquidity preference theory with the non-financial firms and its specific financial transactions in mind. The theory was rather a macroeconomic theory of interest rate formation.

In *The General Theory* (Keynes, 1936), Keynes identified three major liquidity motives: (1) the transaction motive, including the income and the business motives, (2) the precautionary motive and (3) the speculative motive. These three motives can be interrogated with respect to the question about secularly rising liquidity preferences among non-financial firms.

(1) The transaction motive simply covers business expenditure in the period 'between the time of incurring business costs and that of the receipt of the sale-proceeds' (Keynes, 1936, p. 195). The volume held under this motive might increase with firm size. There is, however, no obvious reason why it should increase as share of firm size or – as has been observed over the past two decades or so – gradually over time.

(2) The precautionary motive provides funds for unforeseen expenditure, be they contingencies or investment opportunities (Keynes, 1936). Crucially, Kalecki pointed out that, while held on the balance sheet, these precautionary funds were also a source of cash flow, supplementing cash flow from productive operations (Kalecki, 1991[1954]).

(3) Finally, the speculative motive – being the most complex – is shaped by financial transactions and expectations about future developments in financial indicators, together determining the interest rate.

Keynes's major innovation in finance theory was the introduction of the speculative motive for liquidity (Bibow, 2005). Interestingly, this is the motive that is rarely studied by mainstream economic analysis. In Keynes's view, transaction and precautionary demand for liquidity mainly depended on income levels, while it was the speculative motive that was determined by financial variables and expectations.

Caution is required when applying Keynes's aggregate view to the individual firm. For example, the common interpretation amongst corporate finance economists (see section 2.1.3) that non-financial firms hold liquidity for future investment appears to combine a specific aspect of the precautionary motive in Keynes's sense with his finance motive (Keynes, 1937). The finance motive refers to holding liquid assets, raised either internally or externally, in the interregnum between investment decision and its execution. The motive was introduced by Keynes in way of reply to the critics of his liquidity preference theory.

Keynes was accused of neglecting the fact that firms would require funding for future investment expenditure, necessitating ex-ante saving. This exact idea appears to be the implicit assumption of the corporate finance theory interpretation of the precautionary motive. Keynes agreed that cash balances might increase between investment decision and actual expenditure. However,

he dismissed the argument that saving would have to precede investment. It seems that here the conflation between firm level and aggregate results in a fundamental error.

Dishoarding or credit extension on the aggregate level would have to lead investment according to Keynes (Keynes, 1937). However, increased aggregate saving is merely a consequence of investment activity rather than its precondition. Consequently, rising aggregate saving tends to result in less investment because of the deficient demand it creates. Thus, in Keynes's view buoying investment activity would not have any impact on aggregate liquidity demand, as long as the financial institutions managing the underlying money flows, the so-called revolving fund of finance[13] (Cardim de Carvalho, 2002), are functioning speedily and without disruptions:

> 'Completed activity, whether the proceeds of it are invested or consumed, is self-liquidating and makes no further net demand on the supply of liquid resources' (Keynes, 1937, p. 668).

In fact, a lack of investment activity rather than its anticipation would cause a money hoard since it would interrupt the circulation of this fund. With rising investment rates, an increase of liquid funds on non-financial companies' balance sheets would have to be backed by credit extension, allowing for hoarding alongside expanding investment (Cardim de Carvalho, 2002). Thus, increased liquid holdings could be a side product of rising investment expenditure. This, however, would be expected to be a cyclical rather than a secular phenomenon.

A contemporary of Keynes whose ideas help understand the financial transactions of non-financial business is Kalecki. As mentioned in the previous section (2.2.1.), Kalecki's work was heavily influenced by Marx's analysis. Therefore, his thought could legitimately be classified under the German

[13] The concept of the revolving fund of finance is reminiscent of Marx's idea that in a closed economy without government, money spent in the economy circulates with capitalists' expenditure on investment and consumption, returning to them as profits (Toporowski, 2012).

economic tradition (see Toporowski, 2012). This observation will be discussed in detail from a macroeconomic perspective in chapter 5. As to the dealings of the individual firms, Kalecki's 'principle of increasing risk' is key (Kalecki, 1937).

According to Kalecki, companies could hold larger volumes of liquid assets to reduce their gearing ratio. A high gearing ratio – that is, liabilities to liquid asset ratio – would raise a company's riskiness. The risk Kalecki had in mind was not the calculable risk, which assigns specific probabilities to known outcomes as typically done in mainstream economics model. The real risk faced by a firm is the chance of loss (Mott, 2012); thus, the higher the share of debt to own assets, the larger the danger that exists to the firm's wealth position in the case of failure. This means that external funding becomes increasingly expensive the more indebted a firm is. This is Kalecki's 'principle of increasing risk' (Kalecki, 1937).

Therefore, in Kalecki's framework, firms would attempt to keep their leverage and debt levels down. The possibility of investment failure means that companies do not possess perfect foresight, introducing uncertainty (as opposed to risk) in Knight's and Keynes's use of the term (Knight, 1921, Keynes, 1936). Future outcomes are truly unknown, meaning that there are no probabilities that can be attached to them.

Consequently, Kalecki assumed that investment expenditure is mostly financed internally, in contrast to Keynes and much of the post-Keynesian tradition (Toporowski, 2012). Investment spending is self-financing for capitalists (or companies) in aggregate, as long as expenditure on capital formation is high. This situation is famously illustrated in the saying: 'Capitalists get what they spend and workers spend what they get'.

Under such circumstances, companies' demand for liquid assets – or to use Keynes's terminology, their liquidity preference (Keynes, 1936) – is a result of

uncertainty in the marketplace. Non-financial firms could strive to generate financial income because it is less uncertain than income from production:

> 'Suppose, for instance, that an entrepreneur fails to make any return on his business. Now, if only a part of his capital is invested in business and a part is held in first-rate bonds, he will still derive some net income from his capital' (Kalecki, 1991[1954], p. 278).

Indirectly Kalecki pointed out size differences among firms because of the importance of size for firms' access to credit and capital markets. Building upon Kalecki's (1937) 'principle of increasing risk', the heterogeneity of companies was further examined by Josef Steindl (1945a, 1945b), who focused on differing competition patterns across businesses.

Steindl, an Austrian economist and Kalecki's colleague, elaborated the interaction between competitive and oligopolistic sectors in the economy, arguing that it leads to the 'maldistribution of profits' (Steindl, 1976[1952]). The 'maldistribution of profits' refers to a situation in which profits are re-distributed through the pricing mechanism from relatively more competitive sectors in the economy to sectors that are dominated by oligopolies or monopolies. Patterns of competition are identified according to pricing power of firms.

More competitive firms have by definition negligible power to determine the price of their products, meaning they are price takers. Oligopolistically operating companies are price makers, having influence over their commodity's price. Kalecki (1991[1954]) coined this pricing power 'degree of monopoly', which is exercised by a firm in relation to competitors and clients, but also vis-à-vis its workers.

Since oligopolistic firms have by definition stronger pricing power, they can keep their wage expenses relatively low while preserving a large profit margin, that is large net income as share of revenue. This depresses workers' demand relative to a situation where higher wages would be paid. Relatively lowered demand impacts most strongly on competitive companies since – by definition

– they do not possess pricing power and must reduce prices to meet declining demand. Oligopolistic firms do not need to reduce prices (or not as much), meaning their profit is relatively less affected, leading to re-distribution of profits from competitive to oligopolistic businesses. Thus, capitalists might get what they spend in aggregate, but some of them will get less and some will get more than they spend.

Financial operations in the capital markets exaggerate this 'maldistribution of profits' since according to Steindl 'not only is the rate of internal accumulation greater in the oligopolistic sector, but the absorption of new funds by share issue is incomparably more easy there than in the sector of competitive industries' (Steindl, 1976[1952], p. 155).

Alfred S. Eichner pursued a similar research agenda to Steindl, when studying the 'megacorp' (Eichner, 2008[1976]). The 'megacorp' is defined as a large multi-plant operation, in which ownership and control are separated and which, importantly, is a member of at least one oligopolistic industry. This oligopoly position implies that the 'megacorp' can set prices according to a mark-up rule, facing, consequently, a different set of price curves than a competitive firm would. Hence, Eichner's work mainly dealt with the large listed corporation.

With respect to financial operations of non-financial corporates he believed that external finance would be sought to fund investment only in as much internal funds were not sufficient. The larger the megacorp's ability to impose a substantial mark-up on its produce, the larger retained profits. If equity was raised, the megacorp's would attempt to keep dividend payments, which competed with investment for corporate resources, to a minimum, preventing disgruntled shareholders from a takeover bid (Fung, 1992).

In post-Keynesian analysis, the financial investor is a rentier, depressing non-financial firms' profits and by extension capital investment expenditure and macroeconomic growth. In Keynes's (1936) analysis the rentier is a functionless

investor, who generates financial income from his capital ownership, not being actively involved in production. In that sense shareholders are rentiers. Kalecki (1991[1954]) coherently described the adverse impact of rentier profits on investment, stressing that rentier savings that do not return to companies will depress corporate profits and therefore investment and growth:

> 'Let us assume that when total gross savings are equal to depreciation, some outside current savings, which we call "rentiers' savings" are in existence. Thus the "internal" savings of firms (equal to depreciation minus rentiers' savings) are below the depreciation level, which tends to depress investment below that level as well. This introduces a negative trend in the system' (Kalecki, 1991[1954], p. 335).

Therefore, according to (traditional)[14] post-Keynesian theory non-financial companies will 'borrow only to the extent that they have been accumulating their own means to finance investment' (Lavoie, 1992, p. 109). Inspired by the principle of increasing risk (Kalecki, 1937) and Hyman Minsky's Financial Instability Hypothesis post-Keynesian analysis views external finance – be it debt or equity – with scepticism.

In his Financial Instability Hypothesis, Minsky argued that non-financial firms used financial operations primarily to finance their investment in productive assets. In the course of the business cycle, when debt burdens of non-financial companies increase, deteriorating financial positions, this investment becomes increasingly speculative. Speculative in the sense that increases in cash flow or asset price become necessary to pay off financial commitments entered to produce the productive assets. Chapter 5 will show that South African non-financial corporations also engage in speculation in real assets.

Most importantly, Minsky was one of the first economists to highlight the importance of balance sheet analysis in economics:

> 'In a capitalist economy, one way every economic unit can be characterized is by its portfolio: the set of tangible and financial assets it owns, and the financial liabilities on which it owes' (Minsky, 1975, p. 70).

[14] Post-Keynesian analysis, which is not part of the financialisation literature.

Here, assets and liabilities are critically intertwined rather than independent of each other, as is often assumed in mainstream analysis, where portfolios of assets are chosen regardless of liabilities held. The balance sheet (or more commonly, the client's net worth, which is understood as a proxy for the balance sheet) figures prominently in modern credit cycle models and in so-called third generation currency crisis models (see chapter 3, part 3.1.2. for a detailed discussion). While balance sheet analysis is invoked, the approach taken tends to be highly reductionist, collapsing the balance sheet to net worth, that is, the difference between total assets and total liabilities.

By contrast, Minsky did not reduce balance sheets to agents' net worth. His Financial Instability Hypothesis combined the Keynesian notion of uncertainty (as opposed to risk) with Kalecki's profit-investment nexus[15] and Schumpeter's views[16] on finance, while taking inspiration from Fisher's debt deflation theory (Toporowski, 2008). In Minsky's analysis, companies' balance sheets were central because they revealed the interconnectedness between non-financial firms' financial operations and their productive investment. Non-financial firms finance real investment through operations in the financial markets, obtaining funds (or cash flow) today, while creating commitments for future payments (liabilities). These funds are in turn reinvested in productive capacity – according to Minsky – creating potential future receipts (assets). During economic upswings companies would build up debt, triggering recession once corporate cash flow could not service this debt any more (Minsky, 1986).

Importantly, the balance sheet becomes a link between the past, the present and the future. It reflects past assets purchased, current operations and cash flow, as well as payment commitments falling due in the near and distant future

[15] Kalecki understood capitalists' profits as reflux of their investment expenditure, which is similar to Keynes's concept of the revolving fund of finance discussed in chapter 1 above.

[16] In Schumpeter's view, finance was the engine behind investment – and business cycles – since credit allowed entrepreneurs to introduce new technologies, reaping supernormal profits (Schumpeter, 1983[1934]).

(through current and long-term debt). Thus, balance sheet analysis cannot be undertaken without acknowledging historical time.

Minsky's inspiration was Irving Fisher's debt deflation theory (Fisher, 1933), which interpreted the Great Depression as a vicious cycle of overly indebted firms attempting to pay off their debt and while doing so merely increased their own debt in real terms. In Fisher's theory, a mad rush to liquidate corporate assets in order to meet debt payments lowers prices for machinery, reducing firms' cash flow – together with the price level – and making it increasingly impossible to pay off debt with the cash coming in. Thus, Fisher had the balance sheet and also non-financial firms' cash flow (thus, their cash flow statement) in his mind's eye when formulating his debt deflation theory.

Writing in the Kaleckian tradition, Jan Toporowski (1993) has argued that applying the liquidity preference to corporate balance sheets of non-financial firms allows us to understand the difference between entrepreneurial and rentier firms. While the entrepreneurial company will attempt to keep its external liabilities – debt and equity – to a minimum, as predicted by the principle of increasing risk, the rentier firm is overcapitalised, counterbalancing this burden through liquid asset holdings. The heightened liquidity preference of rentier firms is important because it has a feedback effect onto the firm's productive operations, since real and financial decisions are closely intertwined on the corporate balance sheet. Using the corporate liquidity preference, Toporowski (1993) argues that active financial operations and high volumes of debt and issued equity (in contrast to retained earnings), characteristic for rentier firms, can reduce corporate investment into fixed assets in favour of liquid asset holdings. This happens because financial investment constitutes an alternative to capital investment and because liquidity has to be increased with rising external exposure (that is, exposure to debt plus issued equity), tying up internal resources as liquid holdings in order to keep gearing down, which reduces the risk of insolvency and, at the extreme, bankruptcy.

The concept of overcapitalisation (Toporowski, 2008a) identifies firms that hold substantial liquid assets not for operating, investing in or financing their core business activities, meaning production or service provision in the case of non-financial firms, but rather for cash management and financial investment. The main motive behind their holding of liquid assets is the desire to lower their gearing, that is, the ratio between external liabilities (including equity) and liquid assets. This is important since the valuation of assets on corporate balance sheets tends to fluctuate strongly over the course of the business cycle while the value of liabilities remains unchanged. This is especially visible in companies' goodwill, as already pointed out by Josef Steindl (1945b).

Hence, it is too risky for listed companies to finance productive investment out of external funds since an investment failure or cycle-induced drop in asset values could push a company into technical insolvency, with firm liabilities exceeding firm assets (Toporowski, 1993). This is simply a balance-sheet application of the principle of increasing risk. Crucially, the rentier firm keeps its gearing down through amassing liquid assets, rather than through abstaining from issuing equity.

The concept of overcapitalisation stresses the structural interrelation between assets and liabilities on the corporate balance sheet. In that sense it is deeply influenced by Minsky's notion of firms (and economic units, in general) as balance sheets. These structural interrelations can arguably account for some of the phenomena observed in the financialisation literature. Hence, while individual, group and class interests are important categories of analysis, it should not be forgotten that the set-up of the balance sheet and the inherent nature of assets and liabilities also impact companies' financial operations.

The three questions raised in the introduction (about (1) the role of non-financial transactions, (2) the type of firm considered and (3) potential reasons for increase liquid asset holdings among non-financial corporations), can now be answered in summary:

(1) The role of financial operations among non-financial businesses is interpreted differently by Keynesian and post-Keynesian theory. In Keynes's and Minsky's (and equally, Eichner's) analyses external borrowing is crucial for capital formation. Kalecki highlighted the possibility of non-financial firms holding on to safe financial assets as way of diversifying their income sources. This is elaborated upon by Toporowski, who put forward the concept of the 'rentier firm'. Finally, Steindl pointed out that financial operations (especially equity issuance) have the potential to exacerbate the maldistribution of profit, which is a redistribution of profit from dynamic competitive non-financial firms towards oligopolistic non-financial businesses.

(2) The Kaleckian tradition, specifically with the work of Steindl, is one of the few schools of thought which considers the heterogeneity of the firm as central to its analysis. Nevertheless, much post-Keynesian research focuses on large listed corporations, the so-called megacorps.

(3) In Kalecki's view, non-financial firms would attempt to hold their gearing ratio, that is, the share of borrowed funds to own liquid assets, down. Hence, growing liquid asset holdings would not figure in this framework. However, the rentier firm would increase its financial (and liquid) assets volume with the aim of reducing its own uncertain profit expectations by holding a diversified portfolio of financial assets.

Table 2.4. Summary theoretical micro perfective on finance, Keynes and the Kaleckians

	Role of financial operations of non-financial firms	Non-financial firms in analytical focus	Reason for rising liquidity holdings
	Heterodox economics		
Keynes	Support productive operations		Transaction motive, precautionary motive, speculative motive
Kaleckian theory	Supplement productive operations, exaggerate maldistribution of profit	Heterogeneous firms	Balance sheet management

2.2.3. The 'financialised' firm

Financialisation has become a buzzword well beyond the academic debate[17] since the term was coined in the early 1990s. There are competing views on where the term originated: in Giovanni Arrighi's (1994) *The Long Twentieth Century* [18] or rather with Kevin Phillip, who wrote *Boiling Point* and subsequently *Arrogant Capital*, which devotes a key chapter to 'The Financialization of America' (Foster, 2007).

The phenomenon is multifaceted, explaining why the established working definition sees financialisation broadly as 'the increasing role of financial motives, financial markets, financial actors and financial institutions in the operations of the domestic and international economies' (Epstein, 2005, p. 3). Thus, while there is broad consensus on the general meaning of financialisation, there are diverging views on how it has influenced non-financial businesses and particularly their financial operations.[19]

Initial impulses for the financialisation debate can be found in the structural economic shifts underway in OECD countries since the 1970s. These include the deregulation of financial markets, a wave of financial innovation, changes in corporate governance, and increases in household debt. Macroeconomically, over the same period a secular decline in investment rates and an increase in income inequality and in financial instability have occurred.

Some of the earliest work on financialisation in economics was undertaken by the French *Régulation* School (see, for instance, Chesnais, 1996). According to the

[17] Even the business journal Forbes has lately warned of financialisation 'running amok' (Denning, 2014).

[18] Arrighi, building on Braudel, argued that financialisation was the final stage in the development of a hegemonic power and coincided with its decline. This is rather similar to Proudhon's understanding of the role of finance in a country's development.

[19] In fact, the broad consensus is so broad that there is hardly a defined meaning of the term 'financialisation' (see Seccareccia, 2013).

régulationnistes, in the 1970s profound changes in major advanced economies[20] (including deregulation and information technological progress) weakened the Fordist accumulation regime, which had thrived during the post-World War II boom, encouraging the emergence of a finance-led growth regime (Aglietta, 1999; Boyer, 2000). Fordism was based on the mass production of consumer goods and durables, supported by steady growth in productivity and wages combined with a labour market situation close to full employment.

Within the *Régulation* School, Claude Serfati's contributions are of particular interest to this thesis (Serfati, 1996). Serfati analyses the changing nature of transnational corporations and their operations (Serfati, 2008). He argues that the rise of transnational companies signifies the development of a new type of capital. Both, the Marxist and the post-Keynesian approach to non-financial companies under financialisation, stress the conflicting interests between finance and industry. While Marxists tend to see financial investment as an escape for productive capital, post-Keynesians interpret finance as undermining productive investment (Lapavitsas, 2013).

In contrast, Serfati (2008) – writing in the Marxist tradition – understands the increased financial activity of transnational corporation as complementary to rather than conflicting with their productive operations, giving rise to a new type of 'finance capital'. However, Serfati's concept is the inversion of Hilferding's 'finance capital' since it stresses the control of non-financial firms over financial resources. With this understanding of large non-financial corporations, an increase in their liquid asset holdings would be the result of their striving for larger financial power.

Parallel to the *Régulation* School, when somewhat later, a critical management and organisations research stream emerged (see Lazonick & O'Sullivan, 2000;

[20] The *Régulation* School has mostly been careful to stress the particularity of national trajectories – especially with respect to labour market institutions, the *rapport salarial* – guarding itself against over-generalisation (Grahl & Teague, 2000).

Froud, Haslam, Johal, & Williams, 2000), highlighting the negative consequences of a changing corporate governance structure. The corporate finance literature hailed the mergers and acquisitions boom of the 1980s as a victory for shareholders. An active market for corporate control, induced by frequent takeovers of listed companies, was believed to reduce inefficiency and managers' waste when running corporations. Managers were now forced to use firm resources 'to their highest-valued use' (Jensen, 1998, p. 352, as cited in Froud et al., 2000). This apparently solved, or at least greatly attenuated, the principle-agent problem created through the separation of ownership and control in listed companies, as discussed in part 2.1.2. above.

The increased importance of so-called 'shareholder value' was, however, hurting corporate long-term investment expenditure according to William Lazonick and Mary O'Sullivan (2000). The rise of shareholder orientation among non-financial corporations was arguably the result of the deregulation of financial markets and financial innovation.

Particularly in the US and UK, the phenomenon of stagflation – economic stagnation coupled with high inflation levels – put financial institutions that depended on low but stable returns from financial transactions such as banks, savings and loan associations, insurance companies and pension funds under pressure to generate positive returns for their clients. Seeking to support these struggling financial institutions, the response from regulatory authorities was to deregulate and enable them to invest substantially in equity and other risky, but more profitable, financial securities, such as junk bonds, i.e. securities rated below investment grade. There was a shift in the main income source of financial firms – at least in the US – from supporting long-term investment to trading securities (Lazonick & O'Sullivan, 2000).

In consequence, firm managers were forced to generate shareholder value, that is, to maximise the shareholders' dividend receipts and capital gains. According to Lazonick and O'Sullivan (2000), this constituted a profound transformation

in the investment strategy of US listed non-financial corporations from a strategy of retain and reinvest to downsize and distribute. Instead of investing and hiring with a long-term planning horizon, managers now focused on maximising their companies' equity price through corporate and financial restructuring, resulting in employee lay-offs and more active balance sheet management, for example with the help of share buybacks.

The secular growth in liquid assets on listed companies' balance sheets is not easily compatible with the increased power of shareholders, since, according to both the aforementioned managerial theories of the firm and the concept of shareholder value, they would try to appropriate these resources. Hence, the shareholder value argument does not sufficiently enlighten the preference of non-financial corporations to hold liquid assets despite conflicting shareholder interests.

More important for this thesis is the financialisation literature, which deals with the increase in financial activity among non-financial companies (Duménil & Lévy, 2004, Stockhammer, 2004, Krippner, 2005, Orhangazi, 2008, Lapavitsas, 2013). Typically, at least one of the two following claims are made about the effects of financialisation on non-financial firms' operations: (1) Non-financial companies are forced to pay out large and increasing shares of their profits to financial rentiers, including shareholders according to the shareholder value story outlined above; and/or (2) non-financial businesses increasingly generate profit from financial investment, which tend to be short-term in nature, as opposed to long-term capital investment. Both statements are put forward as explanations for declining levels of fixed capital spending by the non-financial corporate sector.

However, if both statements are true (as, for example, is claimed by Orhangazi, 2008) and non-financial firms are forced to pay out as much profit in dividends as they receive in financial profits, it is not clear why corporate capital investment should be depressed. With respect to the rentier firm (discussed in

the previous section), Toporowski argues that if all equity was held among listed corporations it would simply redistribute profit among them. This could smoothen sectoral profit fluctuations if corporations hold a diversified portfolio of equity (Toporowski, 1993).

Proponents of both arguments believe that non-financial firms increased financial transactions have adverse effects on the firms themselves and on the economy at large. Economists who put forward the first argument tend to write in a post-Keynesian tradition, identifying the rentier and his interests as detrimental to production and productive investment (see, for instance, Stockhammer, 2004, Orhangazi, 2008, Duménil & Lévy, 2004). Following Epstein's definition, the rentier has gained increased power vis-à-vis productive capital due to financialisation. Therefore, the non-financial corporation suffers because interest and dividend payments are draining its retained profits, limiting their possibility to invest.

The story of high interest payments was, of course, a pertinent one for the major advanced economies during the 1980s, when interest rates increased dramatically during the Volcker experiment. They, however, came down subsequently as inflation decreased over the 1990s within the OECD world and declined to very low levels in the US (commonly assumed to be the financialised economy *par excellence*) in early 2000s. Thus, during those latter years it is difficult to claim that non-financial firms suffered extraordinarily high debt servicing cost. More fundamentally, the argument depends on the assumption that non-financial companies obtain external finance to undertake a substantial share of their investment and are typically net debtors.

As will be discussed in more detail in chapter 6, this is in fact not the case. Especially, in the Anglo-Saxon economies investment expenditure tends to be almost entirely funded through retained profits (see Corbett & Jenkinson, 1996) and this trend has intensified over the past two decades (Lapavitsas, 2013), the decades during which non-financial corporations allegedly have 'financialised'.

Of course, it could be countered that given intensified shareholder value orientation dividend (rather than interest) payments have increased reducing corporations re-investable resources. This view, however, assumes that non-financial listed corporations do not hold equity themselves, as the rentier firm (Toporowski, 1993) would. Among the non-financial corporations listed on the Dow Jones 30[21], Karwowski & Shabani (2013) show that seven out of 26 companies hold substantial financial assets. Hence, these could be characterised as rentier firms.

Andrew Kliman and Shannon Williams (2012) contest the idea that financial transactions of non-financial firms in the US undermine capital expenditure, arguing that financial pay-outs – that is mainly dividends and interest service – are financed through increased borrowing. The general fall in fixed capital investment is in fact a result of falling company profits rather than financialisation. This argument is in line with the second statement above, claiming that financial investment is increasingly undertaken by non-financial firms at the detriment of productive investment, has been put forward in a Marxist tradition. Most prominently Greta Kippner (2005) showed that non-financial companies in the US increasingly generate income from financial investment. The share of portfolio income, that is financial revenue, in total income grew fivefold between the 1950s and 1980s. By 2000, non-financial companies in the US generated as much income from financial transactions as from their productive operations. According to Krippner, this was a clear sign of their financialisation.

The Marxist understanding of the financialisation of the non-financial firm has to be seen against the background of the observed fall in the profit rate during the post-World War II boom, culminating in a profitability crisis in the 1970s

[21] The Dow Jones 30 index was first published in 1885. It contains the 30 largest listed US-based companies have traded during a standard trading session. Karwowski & Shabani (2013) focused on the 26 non-financial corporations traded on the Dow Jones 30 during 2013.

(see, for instance, Magdoff & Sweezy, 1987, Arrighi, 1994, Brenner, 2003). Since profitability of production decreased with the end of the Fordist era (characterised by high employment, high productivity and high investment), productive capital had to look for alternative sources of profit (see, for instance, Husson, 2008).

Financial deregulation – which was in the interest of large multinational corporations that needed finance across borders – helped to overcome the profitability crisis, while empowering finance capital and coinciding with the emergence of a 'neoliberal' ideology[22] (Duménil & Lévy, 2004; Fine, 2013). Subsequent financial innovation provided a temporary fix for capitalists' profits while exacerbating systemic contradictions (Harvey, 2004) – such as falling wage shares in the face of rising production output – which erupted intermittently, culminating in the global financial crisis according to some authors (see, for instance, Panitch & Gindin, 2004).

Some authors expect the financial operations, which have crept into non-financial companies' dealings, to be of a speculative nature. This suggestion is often made with regard to non-financial businesses in emerging economies. For instance, Firat Demir (2007) argues that financial liberalisation in Argentina, Mexico and Turkey has induced listed non-financial corporations in these countries to turn their attention towards speculative short-term investment in financial markets at the cost of long-term capital formation. Maryse Farhi & Roberto Borghi (2009) show that non-financial corporations in a range of emerging markets – including Brazil, China, South Korea, India, and Mexico – have suffered substantial losses in derivative markets. Thus, non-financial corporations in these countries appear to have engaged in speculative financial investment. This argument has also been made for South Africa (Marais, 2011,

[22] Duménil & Lévy (2004) interpret neoliberalism as the re-emergence of the hegemony of finance – after rules regulating financial flows under Bretton Woods and especially interest rates regulation were abandoned. Generally, neo-liberalism is understood as an ideology based on *laissez-faire* policies, curtailing government intervention.

Ashman & Fine, 2013). In South Africa the activity of the large company groups – including first and foremost Anglo American – has been seen as major driver of financialisation. These company groups obtained an ever-increasing dominance over the South African economy particularly since the late 1970s (see chapter 3). With the re-integration of the South African economy into the global financial system since 1994, these company groups, and South African corporations in general, have increasingly become involved in financial investment at the expense of real sector investment (Ashman et al., 2013). While not empirically demonstrated, the suspicion emerged that much of this financial investment has been speculative. Thus, according to Ashman and Fine (2013, p. 156) financialisation is characterised by the expansion of financial assets relative to real activity and, crucially, 'the absolute and relative expansion of speculative as opposed to or at the expense of real investment'.

Financial liberalisation plays an important role in the financialisation processes taking place in developing and emerging economies, since it is the integration into global markets that arguably forces domestic non-financial firms into financialised investment behaviour. Correa, Vidal, & Marshall (2012) argue that the regulatory opening of trade and financial markets in Mexico has forced large local companies to compete with global multinationals. Under pressure to keep up their operations' profitability these non-financial corporations are pushed towards more speculative investment.

Apart from engaging in speculative financial operations themselves, domestic non-financial companies are often seen as passive recipients of increased financial flows, at the mercy of speculative activity by international hedge and private equity funds (Chandrasekhar & Pal, 2006). Financialisation of these firms is perceived to be determined from outside, caused by financial deregulation and capital account liberalisation. The results have not been increased investment by, and facilitated capital market access for, non-financial firms as argued by vocal mainstream proponents of liberalisation (especially

Levine, 2005), but rather an adverse effect on companies' financial access (Rashid, 2013).

Generally, both ideas, namely that (1) non-financial firms need to increasingly yield to shareholder demands and that (2) they invest more and more into financial assets, coexist in the financialisation literature and are often invoked together (see Orhangazi, 2008). However, the two ideas have very different implications for the role that financial transactions play in non-financial business operations. The former implies that non-financial business is at the mercy of the financial investor, while the latter suggests that non-financial companies increasingly become financial investors themselves.

Stockhammer acknowledges this contradiction, while playing it down:

> 'While there is broad agreement (in heterodox economics) that financial motives and actors have become more important within firms, there is a subtle difference in interpretation. Firms could be the victims of institutional investors, or shareholder value orientation could be a strategy of increasing exploitation' (Stockhammer, 2013, p. 105).

To this author the difference in interpretations appear rather more than subtle, revealing that, despite claims to the contrary, heterodox economists' understanding of the role of financial transactions in non-financial businesses' operations is limited. This might also have methodological reasons. Even where firm-level data is employed (such as by Orhangazi, 2008) underlying business processes often remain concealed, since firms are not studied in qualitative detail but rather treated as data points in quantitative exercises.

To come back, by way of summary, to the three questions (about (1) the role of financial operations, (2) the non-financial firms in the analytical focus and (3) the potential reason for increases in liquid asset holdings), the following answers can be extracted from the financialisation literature:

(1) The aim of financial operations of non-financial businesses has moved increasingly towards income and profit generation, according to those authors who operate in a Marxist framework. Writers in the post-Keynesian tradition

assume that the non-financial firm is a net debtor, implying that financial transactions are (at least to some extent) supporting production.

(2) Similar to much of the mainstream literature, the analytical focus appears to be on large listed corporations. Some firm heterogeneity is introduced in the work on emerging economies, since here listed domestic corporations interact with large multinational companies. The small and medium-size firm is mostly absent, however.

(3) The increasing presence of liquid asset holdings on non-financial firms' balance sheet is not easily explained, since it clashes with the shareholder value concept, which is highly influential in this literature. Shareholders are assumed to push for dividend pay-outs, which eat into corporations' re-investable resources. However, if non-financial business is understood to increasingly profit from financial, potentially speculative investment, higher liquid asset holdings could simply be a result of this new investment strategy.

Table 2.5. Summary theoretical micro perspective on finance, financialisation approaches

	Role of financial operations of non-financial firms	Non-financial firms in analytical focus	Reason for rising liquidity holdings
	Heterodox economics		
Financialisation approaches	Harm productive operations, speculation	Large listed corporations	
post-Keynesian strand	Harm productive operations	Large listed corporations	Not consistent with shareholder value
Marxist strand	Replace productive operations	Large listed corporations	Financial speculation

2.3. Summary and conclusion

Corporate finance theory, especially in its early general-equilibrium version, offers little guidance on non-financial companies' financial operations and liquidity holdings, since the theory is more interested in the financial instruments issued by large corporations than in non-financial businesses' financial and productive dealings. This changes somewhat with the

acknowledgement of asymmetric information and other market frictions (such as transaction costs in the case of bankruptcy).

The empirical literature inspired by corporate finance is extremely eclectic with regard to non-financial firms' motives to hold cash and cash equivalents: there is the tax motive, the agency motive (both inspired by corporate finance theory), but also the transaction and the precautionary motive adapted from Keynes's liquidity preference theory. The precautionary motive figures prominently in empirical studies, but there does not seem to be a consensus on how to define or measure this motive. The focus of analysis is mostly on large listed non-financial companies. The heterodox literature possesses a range of different research strands as is shown in Table 2.6. below.

The answers to the three questions about (1) the role of financial operations in non-financial companies, (2) the type of the non-financial firms that is in the analytical focus and (3) the potential reason for increases in liquid asset holdings vary substantially across these strands.

It should be noted that the Kaleckian tradition is the only one which explicitly deals with heterogeneous firms, while most other research agendas focus on large corporations. Many heterodox economists were (or are) sceptical towards financial dealings of non-financial firms, suspecting a harmful impact on productive operations and particularly investment. Thus, the speculative motive emerges as a potential reason for non-financial companies rising liquidity holdings.

Table 2.6. Summary of theoretical micro perspectives on finance

	Role of financial operations of non-financial firms	Non-financial firms in analytical focus	Reason for rising liquidity holdings
	Mainstream economics		
Corporate finance-cum-general equilibrium	Support productive operations	Large listed corporations	Inconsistent with the theory
Corporate finance-cum-asymmetric information	Support productive operations	Large listed corporations	Tax motive, agency motive, transaction motive, **precautionary motive**, (speculative motive)
	Heterodox economics		
German-language tradition			
Marx	Support productive operations	Heterogeneous firms	Side effect of investment and sign of crisis
Hilferding	Support productive operations	Large listed corporations	Not consistent with sophisticated financial system
Veblen	Replace productive operations	Large listed corporations	Financial speculation
Keynes	Support productive operations		Transaction motive, precautionary motive, speculative motive
Kaleckian theory	Supplement productive operations, exaggerate maldistribution of profit	Heterogeneous firms	Balance sheet management
Financialisation approaches	Harm productive operations, speculation	Large listed corporations	
post-Keynesian strand	Harm productive operations	Large listed corporations	Not consistent with shareholder value
Marxist strand	Replace productive operations	Large listed corporations	Financial speculation

Chapter III: A Balance Sheet Approach to Financial Operations of Non-Financial Firms

This chapter sets out the balance sheet approach to financial operations of non-financial firms, which will inform the empirical microeconomic analysis of this thesis. The three questions to guide the microeconomic analysis formulated in the introduction will guide this chapter. These questions are:

(1) What is the role of financial operations in non-financial companies? (2) What type of companies are in the analytical focus? (3) What explanation is given for a rising cooperate liquidity preference?

It will be argued that mainstream economics balance sheet analysis rarely accounts for the actual balance sheet since it mostly focuses on net worth, that is the difference between total assets and total liabilities. This narrow focus is exacerbated by the aggregate perspective usually adopted, either assessing a representative firm (or household) or considering all firms (or households) in aggregate (see Mishkin, 1978; Bernanke & Gertler, 1995). Mainstream economics is interested in the amount of credit a firm – or any other economic entity – might be able to raise rather than in understanding the financial operations behind companies' balance sheet management.

The chapter will put forward an alternative balance sheet approach to avoid the reductionist treatment of the balance sheet. This approach is informed by the practice-oriented in-depth balance sheet analysis carried out by accountants. Therefore, the chapter reviews the origins of balance sheet and financial ratio analysis, as they are carried out in accounting. Financial ratios are inspired by practical considerations and part of modern accounting, but mostly absent from economics research. Understanding the firm's balance sheet – as more than merely net worth – sheds light onto the puzzling phenomenon of rising liquidity among non-financial companies.

The chapter develops a methodology based on financial ratios as alternative to net worth analysis. This is applied to the idea of overcapitalisation – introduced in the previous chapter. Here it is argued that overcapitalised firms are likely to see financial investment and mergers and acquisitions as alternatives to productive investment and organic firm growth. This chapter operationalises the concept of overcapitalisation, first, by using conventional financial ratios and subsequently, by suggesting an original financial ratio, namely the overcapitalisation ratio (OCR), to distinguish between different types of non-financial firms' liquidity preferences. This operationalisation is crucial since, on the one hand, it constitutes one of the original contributions in this thesis, and on the other hand, it provides the basis for the empirical analysis that will be presented in chapter 4.

Finally, a balance sheet approach for South African non-financial firms must take into account both the history and the contemporary realities of the country's corporate landscape. While the microeconomic analysis of South African non-financial companies in the following chapter will focus to a large extent on listed corporations, small and medium-sized companies, as well as household-based firm activity, will be considered wherever the data allows for it. To make an informed judgement on the financial position of South African non-listed business in the empirical analysis that follows, this chapter provides an overview of the structure of the sector (in part 3.3).

3.1. Balance sheet analysis in mainstream economics

3.1.1. The origins of balance sheet analysis

Records of the use of balance sheets go as far back as the fourteenth century. They were initially solely used by the owners of the counted assets (Brown, 1978). The emergence of the modern firm was arguably accompanied by its formalisation into a balance sheet. For instance, Max Weber in his doctoral thesis reasoned that the legal form of the early German small and medium-sized enterprise emerged when German family communities transformed into

labour communities (Weber & Kaelber, 2003). During this transformation relations were rationalised, acknowledging that not ties of kin but of functionality defined the productive unit. Those members of the household – including non-blood related individuals such as craftsmen's apprentices – became part of the labour community, an early manifestation of the firm, having legally part in its expenditure and acquisition. As consequence, relationships had to be rationalised through definition and delineation of assets and liabilities.

Hence, accounting techniques had to be introduced. For Weber this rationalisation is at the origin of the modern central European firm rather than – as argued by legal scholars before him – the Southern European and particularly Italian *commenda*. The latter was in most cases a maritime enterprise that had no separate legal entity from its owners, which in Weber's eyes was a crucial characteristic of the modern, capitalist company (Weber & Kaelber, 2003). Hence, Weber implicitly grasped the importance of the firm's balance sheet.

His implied understanding of companies as balance sheets might have been inspired by the creation of large listed companies in the US and Europe, which was gaining traction in the late 19th century. The compilation of financial data similar to that which make up the modern balance sheet became a necessity for these listed companies, in which ownership and control was legally separated, especially once they took on external liabilities (Horrigan, 1968).

The growth and proliferation of large listed companies had as a corollary the emerging demand for corporate financial data. In the US commercial banks began requesting financial data from their corporate clients as early as the 1870s, establishing it as a practice by the 1890s (Horrigan, 1968). Credit granting claimed to be a science (Brown, 1978). Thus, the so-called borrower's statement became the basis for this supposedly scientific practice, while the statement's interpretation to establish creditworthiness was at its core.

Cannon presented a paper in 1905 on the science of granting credit, which put forward new analytical tools (Brown, 1978). He crucially distinguished between fixed and current assets, a central characteristic of the modern balance sheet, and formulated some of the first financial ratios. Financial ratios relate selected financial indicators to one another. Using financial ratios, one intends to generate indicators independent of firm size that can be applied across different companies and industrial sectors. Financial indicators are either taken from the balance sheet – yielding static ratios – or the income statement so as to obtain dynamic ratios. A mix of balance sheet and income statement variables also results in a dynamic financial ratio (Salmi & Martikainen, 1994). Cannon applied his formulated ratios to 14 manufacturing sectors in the US, generating one of the first examples of comparative ratio analyses. During the 1920s the interest in financial ratio analysis grew, and by the 1930s the first set of rules for balance sheet standardisation were in place (Brown, 1978).

The current ratio, that is the ratio of current assets to current liabilities[1], established itself as one of the most widely used financial ratios early on, in the US since the 1890s. The current ratio was adopted by US commercial banks as their main assessment tool for lending. In the first decade of the 20th century the convention emerged that a current ratio of 2, meaning the volume of current assets of the client is twice as high as their current liabilities, was perceived as necessary to guarantee financial soundness. The 2:1 current ratio requirement was for decades unanimously accepted (Steffy, Zearley, & Strunk, 1974; Foulke, 1978). The current ratio was also at the centre of one of the first examinations of a large amount of corporate balance sheet data, namely Wall's *Study of Credit Biometrics* published in 1919. The study, undertaken by Wall for the US Federal Reserve Bank, was a compilation of financial data of US firms from the files of commercial paper brokers (Wall, 1919).

[1] Current assets and liabilities refer to relatively more liquid receipts or commitments, falling due within a year. Current assets also include cash and its equivalents, i.e., financial instruments with a maturity of three months or less.

Hence, balance sheet analysis (especially in the form of financial ratio analysis) developed with a practical focus: on the one hand, creditors and shareholders consulted financial ratios to establish the soundness of clients' financial positions. On the other hand, ratio analysis was promoted as tool for managers and firm owners to assess their company's operations and performance. Attempts to identify financial ratios that could serve as early warning signs of default go back to the 1930s (see, for instance, Smith & Winakor, 1935, or Fitzpatrick, 1978). Over the course of the 20th century, performance prediction – be it success or bankruptcy – remained one of the main goals tackled by ratio analysis (see, for example, Beaver, 1966, as cited in Horrigan, 1968; Altman, 1968; Ohlson, 1980). In fact, it is a key goal of such analysis until today (see Volkov & van den Poel, 2012; Tserng, Liao, Tsai, & Chen, 2011; Delen, Kuzey, & Uyar, 2013).

Thus, the development and usage of financial ratios has historically been promoted by more practically and empirically oriented researchers. Managers and accountants customarily use financial ratios. Journals publishing research in the area mostly deal with accountancy, business studies or management. Among the top 100 cited articles listed on ISI Web of Science/Knowledge containing the term 'financial ratio' in the titles 24 have been published by journals dealing with accounting issues, 19 by journals around business studies and (financial) management and only 13 in journals dealing with finance or financial economics more broadly. Interestingly, health economists appear to have a strong interest in financial ratios as performance indicators according to the top 100 cited articles (ISI Web of Science, 2014).

The question how effective and reliable financial ratios should be designed has grown in importance with advances in econometric methods utilised for economic analysis. Issues of proportionality and normality of ratios have been addressed in the past to incorporate ratios into sophisticated regression techniques (see Salmi & Martikainen, 1994, for an overview). More recent

developments in techniques for financial ratio analysis include cutting-edge statistical developments such as Bayesian statistics (Gallizo, Jiménez & Salvador, 2002; Gallizo, Gargallo & Salvador, 2008; Gargallo, Salvador, & Gallizo, 2008). But the question about the reliability of financial ratios goes beyond technique.

From the very beginnings of balance sheet compilation and analysis severe criticisms were expressed concerning their limitations. Most important for this thesis are the reservations expressed against intangible balance sheet items, which are commonly described by the caption 'goodwill'. As Leake (1938) pointed out balance sheet items broadly fall into one of two categories: either material things such as plant, machinery and inventories, or immaterial rights to profit and other values that are expected to rise in price in the future. Thus, goodwill typically contains patents, designs, copyrights, monopolies of any kind and leaseholds that a company possesses. Employees' contacts and professional influence also count as goodwill.

Thus, Leake (1938) warned of the inflation of goodwill, for example, when companies acquire mining rights, i.e., speculating on mineral deposits in the ground. Equally, a takeover of a listed company could inflate goodwill if future returns on intangible assets were valued too optimistically. This process was commonly known as overcapitalisation and rooted in the exaggerated prices paid for listed corporations in takeover bids.

Other dangers of financial ratio analysis flagged by accountants are the window dressing of financial results and erroneous interpretation of ratios. Especially during the early years of balance sheet compilation, company accountants possessed much discretion when producing the financial statements. Hence, the problem of window dressing, i.e. presenting a misleading picture of company finances, was eminent (Wall & Duning, 1928). But even with legal requirements and accounting standards in place, window dressing remains a concern for some commentators (Tamari, 1978). Once again, it can be imagined that the

problem is more pertinent for intangible items whose value has to be estimated by the company.

Finally, the warning that financial ratios are merely a tool rather than an ends in itself is common place among accountants (Steffy et al., 1974; Nelson, 1978, Pendlebury & Groves, 2004). Financial ratios are not *per se* good or bad. There are hardly any ideal levels of financial ratios that firms universally should strive towards. Hence, financial ratio analysis only works in conjuncture with additional information about the assessed company, averages of the industry in which it operates, and developments of the financial ratio over time. In fact, financial ratios work best when they are merely understood as signals to flag problems. Therefore, '[r]atios must be used for what they are – financial tools. […] Ratios must be linked to railroad signals. They tell the analyst to stop, look, and listen' (Nelson, 1978, p. 50).

In the eyes of accountants the entire balance sheet including the qualitative information must be examined to avoid incorrect reasoning due to improper comparisons or a disregard of a company's trade's peculiarities. In fact, ignorance about a firm's business is sometimes perceived to be as much of a danger in financial ratio analysis as making technical errors when calculating ratios (see Morley, 1984).

The interest of economists in financial ratios – and in financial statements more broadly – appears limited. The controversy around the compatibility of the internal rate of return and the accounting rate of return, fought out during the 1960s and 1970s, illustrates this limited interest and maybe also a certain contempt of the economics profession for accountancy techniques in general.

The internal rate of return versus accounting rate of return debate addressed at its heart the question whether accountancy-based measures are compatible with economic theory. Although the controversy is somewhat dated, it reveals the reservations economists entertain against practical accountancy. The internal rate of return is used by in economic theory to assess the profitability of an

investment project and calculated discounting the returns on a company's investment. In contrast, the accounting rate of return, used by accountants, is defined as the funds flow from operations (less depreciation) divided by the book value of capital. Geoffrey Harcourt (1965) discussed the discrepancy of the two rates and came to the conclusion that it was extremely misleading to use the accounting rate of return to compare profitability across firms in different industries or countries. His article set off a debate that persisted for two decades (see Luckett, 1984 for an overview), leaving the question how to reconcile the internal rate of return and the accounting rate of return unresolved. The dismissal of the accounting rate of returns by economists is therefore perceived to implicitly accord 'very little value for [sic] the financial statements annually prepared by the accounting profession' (Salmi & Martikainen, 1994, section 3.1., see also Fisher & McGowan, 1983).

Admittedly, financial ratio analysis is hardly guided by theory, resulting in a multiplicity of ratios proposed to measure liquidity or other dimensions of company performance. Instead, ratio analysis appears mainly guided by accounting conventions. This weakness explains some of the reservations economists had against balance sheet analysis. Mainstream economists do not seem to have paid much attention to financial statement data, while claiming to scrutinise an aggregate corporate balance sheet. Where balance sheet analysis has been invoked in economics, it typically did not involve a consideration of the balance sheet as such. Instead, as indicated above, mainstream economic models tend to collapse the balance sheet of an economic entity to its net worth.

3.1.2. The concept of net worth

The mainstream approach to balance sheet analysis, which appears to become more popular in the aftermaths of financial crises, centres around the concept of net worth. Net worth was often used in early financial ratio analysis. Alongside the current ratio, it was repeatedly identified as a potential indicator of financial distress among companies. For instance, Fitzpatrick (1978) identified net worth

to total debt as best predictor of company failure. Merwin (1978) provided three such predictors, also including net worth to total debt of an enterprise. Importantly though, among accountants a single ratio would not be examined in isolation from other financial indicators and typically not without considering qualitative company information.

By contrast, the utilisation of net worth in mainstream economic theory takes little genuine interest in the balance sheet because the actual assets and liabilities of an economic entity only matter indirectly. Their difference – the net worth – is what matters. This is problematic since a very large company, which is highly leveraged, meaning it possesses large volumes of liabilities to match the assets, could have the same net worth as a small firm with little assets but without any debt on its balance sheet. Furthermore, in reality not only net assets, but the type of assets that a company holds (and their liquidity) matter.

Two equally leveraged firms can face different pressures when they both are required to settle a substantial share of their liabilities. A firm that is awash with liquid assets such as cash and government bonds can either use cash directly to pay off its debt, or utilise its liquidity as collateral to obtain external finance at advantageous conditions. A competitor in the same situation, but with an illiquid balance sheet might face insolvency, if it cannot sell its assets, or even bankruptcy, if it is forced to sell them much below book value.

The importance of liquidity on balance sheets was recognised by Mishkin (1978) when he combined the life-cycle hypothesis, put forward by Ando and Modigliani (Ando & Modigliani, 1963), with the liquidity hypothesis, in the attempt to explain determinants of household aggregate demand. Mishkin utilised net worth and asset liquidity in order to explain the strong reduction in household demand during the Great Depression and the persistence of this crisis.

The life-cycle hypothesis states that consumption is a function of households' net worth and the present value of their future income. Introducing what he

called the 'aggregate household balance sheet' – an aggregate balance sheet for all households – Mishkin (1978, p. 919) argued that households' liabilities and liquid assets should also be taken into account. Econometrically, both variables were found significant in explaining household aggregate demand. Nonetheless, it is not surprising that Ando and Modigliani did not introduce liquidity into their life-cycle hypothesis. In a world where the present value of households' future incomes can be calculated easily there is no uncertainty. And without uncertainty there is little need holding cash and cash equivalents since future income and expenditure is known and can be budgeted for.

The concept of net worth has gained importance in economic analysis during the 1990s and 2000s, once again in the aftermath of financial crises in advanced and emerging economies. A few years after the 1987 financial crisis, Bernanke and Gertler (1989) published an influential paper on the connection between net worth and economic fluctuations. It was subsequently developed into the financial accelerator framework (Bernanke & Gertler, 1995) which – in line with the New Keynesian persuasion – claimed to model the uncertain world, in contrast to earlier work.

Uncertainty here is understood as a disparity in information amongst agents, that is, asymmetric information, giving rise to a principle-agent problem.[2] These asymmetries arguably explain the heightened cost of external vis-à-vis internal finance – that is the agency cost in form of an external finance premium – because the borrower (the agent) possesses more information about his (or her) opportunities, characteristics and actions than the lender (the principle). In this setting, the financial accelerator exacerbates shocks to the economic system through changes in credit market conditions, affecting the balance sheet (or net worth) of households and firms (Bernanke & Gertler, 1995; Bernanke, Gertler, & Gilchrist, 1999).

[2] There is no space for power in the story about asymmetric information. Hence, it is neglected that certain agents can influence information creation and its distribution.

Thus, if a negative (external) shock hits the economy, individuals' net worth will shrink, weakening their financial positions and discouraging future spending, which intensifies the initial negative shock. In the case of a positive shock expenditure is encouraged, starting an economic boom. An erosion of asset prices, for instance, can be such a shock since collateral value is undermined. Arguably, companies often use similar collateral, making so-called contagion across an industrial sector or even across the entire economy likely (Kiyotaki & Moore, 2002).

Similar models were put forward, for instance, by Kiyotaki & Moore (1997) and Kiyotaki (1998). The perceived strength of this class of models was that a small exogenous shock could trigger a business cycle swing through the amplifying effect of the credit system, i.e., the so-called financial accelerator. Previously, models depending on exogenous shocks like real business cycle models, which identified productivity shocks as major propagating mechanisms, struggled to explain strong swings in economic activity in the absence of sizeable shocks. Importantly, the trigger for economic fluctuation in all these models (see also more recently von Peter, 2005 and Matsuyama, 2007) is an exogenously induced change to borrowers' net worth. For South Africa, Fourie, Botha & Mears (2011) undertook an econometric exercise to show that, within a similar model, credit extension is a business cycle indicator.

For emerging economies, the concept of net worth has been employed to explain financial crises. In the aftermath of the East Asian Crisis of 1997-98, economists like Krugman proclaimed that models of currency crises so far had ignored two important factors: the balance sheet and cash flow (Krugman, 1999). What sounded like a serious attempt at balance sheet analysis (taking into account both dimensions of the financial statements, the balance sheet and the cash flow statement), quickly reduced to the well-known net worth assessment.

The East Asian Crisis took most of the economic profession by surprise, because until then orthodox economic wisdom had blamed currency crises on unsustainable fiscal expenditure by governments financed through public borrowing denominated in foreign currency. But the East Asian countries affected mostly had sound public financing and debt positions. In Thailand, for example, where the crisis of 1997-98 started, government finances were in a comparatively good shape when the crisis broke out. Until 1996, the government had a persistent budget surplus. By contrast, domestic companies had borrowed substantially in US dollars (Corsetti, Pesenti, & Roubini, 1998). Therefore, it was private-sector businesses that came under pressure to repay debt once export earnings stalled. A spiral of currency and debt deflation crisis unfolded.

In response, the so-call third generation currency crises models had to be developed, introducing private sector indebtedness as an important determinant of financial fragility. Thus, the balance sheets of financial intermediaries and private corporations attracted prominent attention from mainstream economists (see, for instance, Krugman, 1999, Mishkin, 2001, Eichengreen, 2004). However, the story that was once again boiled down to an adaptation of the net worth concept as trigger of financial distress (see especially Mishkin, 2001). In the context of emerging markets, the external shock that can hit non-financial companies' and banks' net worth is a depreciation or unexpected devaluation of local currency. Net worth deteriorates for those economic units that have borrowed in foreign currency. Their expenditure slumps in consequence, reducing domestic aggregate demand, which further weakens the cash flow of domestic businesses. An economic crisis unfolds.

Actual balance sheets have little to do with the macroeconomic story discussed in third generation crises models. The models typically address a country's balance sheet (Eichengreen, 2004) or an aggregate corporate balance sheet

(Krugman, 1999, Mishkin, 2001). As Gurley & Shaw (1960) already pointed out in the 1960s, excessive aggregation of financial positions (for example when using a national balance sheet) seriously hampers financial analysis (see chapter 5). This is one of the shortcomings of the mainstream treatment of balance sheets. The following section will highlight the most severe limitations of a reductionist approach to financial statements analysis and alternative approaches which can overcome these.

3.1.3. Shortcomings of mainstream balance sheet analysis

As highlighted in the discussion above, there are two main shortcomings of the mainstream treatment of balance sheets: (1) the frequent reduction of the wealth of information provided by balance sheets to net worth and (2) the over-aggregation of individual balance sheets into a single balance sheet representing the economy as a whole, non-financial companies in aggregate or households as a group.

(1) As discussed in the previous chapter, Minsky supported an understanding of economic entities as balance sheets. Importantly, he did not reduce balance sheets to agents' net worth. In Minsky's analysis, companies' balance sheets are central, because on the one hand, they reveal the interconnectedness between non-financial firms' financial operations and their productive investment. On the other hand, they also highlight how past business operations are linked to present cash flow and up-coming payment commitments. Non-financial firms finance real investment through operations in the financial markets, obtaining funds (or cash flow) today while creating commitments for future payments (liabilities). According to Minsky, these funds are in turn reinvested in productive capacity (assets) creating potential future receipts (Minsky, 1986).

Irving Fisher's debt deflation theory (Fisher, 1933) was a major inspiration for Minsky's Financial Instability Hypothesis. Fisher understood the Great Depression as triggered by a vicious cycle of overly indebted firms attempting to pay off their debt and merely increasing their own debt in real terms, while

selling off productive equipment for ever-falling prices. Firms' cash flow was key to Fisher's theory: a rush to liquidate corporate assets in order to meet debt payments lowers prices of machinery, reducing firms' cash flow – together with the price level – and making it increasingly impossible to pay off debt with the cash coming in. Hence, from an accounting perspective, it can be argued that – in both theories – the analytical emphasis is on companies' balance sheets and their cash flow, thus, the entirety of the corporate financial statement rather than merely net worth.

Interestingly, Bernanke and associates (Bernanke, 1993, Bernanke et al., 1999) acknowledged the existence of Fisher's debt deflation theory and Minsky's Financial Instability Hypothesis in passing without relating it much to their own work. This is somewhat surprising since the amplifying impact of the credit system on economic fluctuations is as much the basis for Bernanke and Gertler's work as for Fisher's and Minsky's. More sophisticated reviews of the credit cycle literature (such as von Peter, 2005) see Fisher's and Minsky's ideas as predecessors of the models put forward by Bernanke and associates. Bernanke, however, claimed that the Financial Instability Hypothesis relied on the irrationality of economic agents, implying that his research (which assumes rational agents) was superior (Bernanke, 1983).

Minsky commented on Bernanke's work, emphasising that it was not the irrationality of agents, which brought about crisis in his theoretical framework. He added that neither does asymmetric information generate crises, as assumed in the New Keynesian world of Bernanke's financial accelerator. In fact, even if information were symmetric financial instability would arise. Thus, '[f]or economics, the appropriate question is how do rational agents behave in an irrational world, i.e. a world they do not fully understand' (Minsky, 1993, p. 9), rather than asking what happens if borrowers are smart and bankers are dumb, which underpins the asymmetric information paradigm according to Minsky.

(2) With the 2007-09 global financial crisis attention once again returned to balance sheet analysis inspired by Fisher's debt deflation, most prominently with Koo's comparison between the Japanese lost decade and the prolonged stagnation in major advanced economies in the aftermath of the 2007-09 crisis (Koo, 2011). He argues that we are currently experiencing a balance sheet recession. Since households, businesses and governments all concurrently focus on paying off their debt there is no engine for economic growth, forcing countries further into stagnation.

This argument echoes Minsky's (Minsky, 1986) and Godley's (Wray, 2012) insights that not all economic agents can deleverage at the same time, making fiscal stimulus necessary during recessions. Godley developed the three balances approach to illustrate the causal relationship between the fiscal and the trade deficit in the US. Godley believed the private sector was typically in or close to balance with households' and non-financial firms' saving approximately equal to firms' investment. Under this assumption a potential trade deficit would be the consequence of public spending in excess of tax income, the so-called twin deficits. This view was accepted until the mid-1990s when the private sector balance began deteriorating visibly, turning from the average US post-war surplus position into a deficit by the early 2000s (Shaik, 2012).

Koo's analysis also suffers from over-aggregation of data, treating households and businesses either as one giant entity or as a representative economic agent. This is especially problematic in the face of vast income and wealth inequalities as they have emerged over the past three decades or so. Hence, genuinely acknowledging the importance of balance sheets rather than some derivative indicator like net worth is indispensable to arrive at meaningful economic methods and analyses.

Similarly, the extensive literature discussing the East Asian crisis using mainstream balance sheet (or net worth) analysis is reductionist in that it does

not acknowledge industry differences or firm heterogeneity (see Krugman 1999; Mishkin 2001; Eichengreen et al. 2003, 2005). Mainstream models treat non-financial firms like one big balance sheet by using aggregate data. This is particularly inadequate in emerging markets where the corporate sector contains a wide range of very different firm types, varying from small subsistence units to large domestic companies, which typically operate in the shadow of giant multinationals.

As argued by Cozzi and Toporowski (2006) for the East Asian crisis, a sectoral disaggregation is necessary to understand the complex dynamics underlying aggregate figures. Otherwise, the corporate sector is either treated as one giant company or the existence of a Marshallian representative firm is supposed. Both assumptions would be problematic in the context of an advanced economy, they become indefensible for an emerging market such as the East Asian economies or South Africa.

The idea that all companies behave like one giant enterprise implies coordination among these firms. However, as was argued by Tugan-Baranowsky[3] (1901) and Kalecki (1984[1967]), among others, under capitalism one of the major origins of crises is the lack of coordination among companies in their investment decisions.[4] In emerging markets, large parts of the population are typically employed in the labour-intensive (and often low-skill) services sector. Here coordination is further hampered by the substantial number of informal firms, which are often operated on a family and subsistence basis, not paying tax and hardly figuring in any firm censuses. Thus, it is highly misleading to assume firm coordination in emerging economies.

[3] A wide range of different spellings of Baranowsky's name has been used when translating his name from the Cyrillic alphabet. Here 'Tugan-Baranowsky' will be used. This is the spelling used on the German translation of this *Theories of Trade Cycles* published in 1901, which was the earliest translation of the book.

[4] Kalecki (1984[1967], p. 155) noted that 'capitalists do many things as a class, but they certainly do not invest as a class'.

Equally difficult would be to apply the concept of a 'representative firm' to an emerging market setting. The representative firm was famously used by Marshall (2013[1890]) in his *Economic Principles*, first published in 1890 and influential until this day. Marshall's ideas about the representative firm were much more nuanced than the modern-day use of the mainstream economic concept could suggest. Marshall stressed that the representative firm was merely a means to generate information about an average firm in a given industry. Generalisation can help to understand the average forces that affect firms according to Marshall.

However, Marshall's conceptualisation did not lose sight of firm heterogeneity because he did not encourage the complete reduction of actual firms to the representative firm. In fact, he suggested using a couple of representative firms depending on the characteristics of a large number of firms in a given industry. Informality complicates the identification of meaningful representative firms. The spectrum of companies operating in emerging markets reaches from the informal units to large domestic and even bigger international non-financial companies. The average firm size might, therefore, be completely meaningless as an analytical tool since the segment of medium-sized firms is squeezed between micro firms and megacorps such as is the case in South Africa where the small and medium-sized enterprise sector is marginalised (Berry et al., 2002). Additionally, where multinational corporations operate the difficulty would arise to distinguish between domestic and global operations when attempting to generate an aggregate balance sheet for a country or its non-financial companies as a whole.

Instead, one would need to differentiate types of representative firms, for instance, the large, the medium-size, the small and even the micro representative firms. Here, data availability and the difficulty to obtain data on informal firms are strong practical limitations to this methodological approach. In any case, assuming one aggregate balance sheet for all national or nationally

operating non-financial companies will strongly limit a researcher's understanding of non-financial firms' operations.

3.2. An alternative balance sheet approach

The balance sheet approach used in this thesis is an alternative to the mainstream approach discussed above. It considers non-financial corporations' entire balance sheets, instead of reducing them to net worth. Furthermore, the thesis advocates a comprehensive balance sheet approach using actual balance sheet information as it is compiled in firms' annual reports, accompanied by financial statements and supplemented by notes on the financial statements. Financial ratio analysis is used as a device to support the evaluation of non-financial firms' financial transactions. However, as advocated by accountants, financial ratios will merely figure as one tool in a broader analytical toolkit.

The proposed alternative balance sheet approach attempts to overcome shortcomings of conventional financial ratio analysis, while methodologically breaking with mainstream balance sheet approaches. The former will be achieved through explicitly guiding financial ratio analysis by economic theory; the latter by disaggregating the concept of net worth and reintroducing financial ratio analysis. In this way, the proposed method of comprehensive balance sheet analysis constitutes an original contribution of this thesis.

3.2.1. The overcapitalisation of non-financial firms

One of the major shortcomings of financial ratio analysis is the absence of economic theory when devising ratios from financial statement items. The alternative balance sheet approach suggested here is guided by the concept of non-financial firms' overcapitalisation (Toporowski, 1993). The high and increasing liquidity preference among non-financial companies observed in a range of OECD countries, and also suspected by economic commentators for South African corporations, is a sign of firms' overcapitalisation. Overcapitalisation identifies firms that hold substantial liquid assets not for operating, investing or funding of their core business activities, but rather for

cash management and financial investment. If non-financial firms are overcapitalised, they engage in financial operations to acquire rentier income and/or speculate on financial and productive assets. This shows up in a heightened liquidity preference.

The worry about the overcapitalisation of companies and even whole industries emerged around the turn of the 20th century. As discussed in section 3.1.1., the intangible character of listed companies' goodwill was a concern to critical accountants (see Leake, 1938). This meant that goodwill, which represents all patents, copyrights, mining claims and any other basis for future profits could be exaggerated. This happens during amalgamations, i.e., mergers and acquisitions, of listed companies, and generally when listed corporations are bought or sold. During such transactions the price for which the equity of a listed company changes hands reflects expected future profitability, because liabilities and equity have to match assets (see Figure 3.1.).

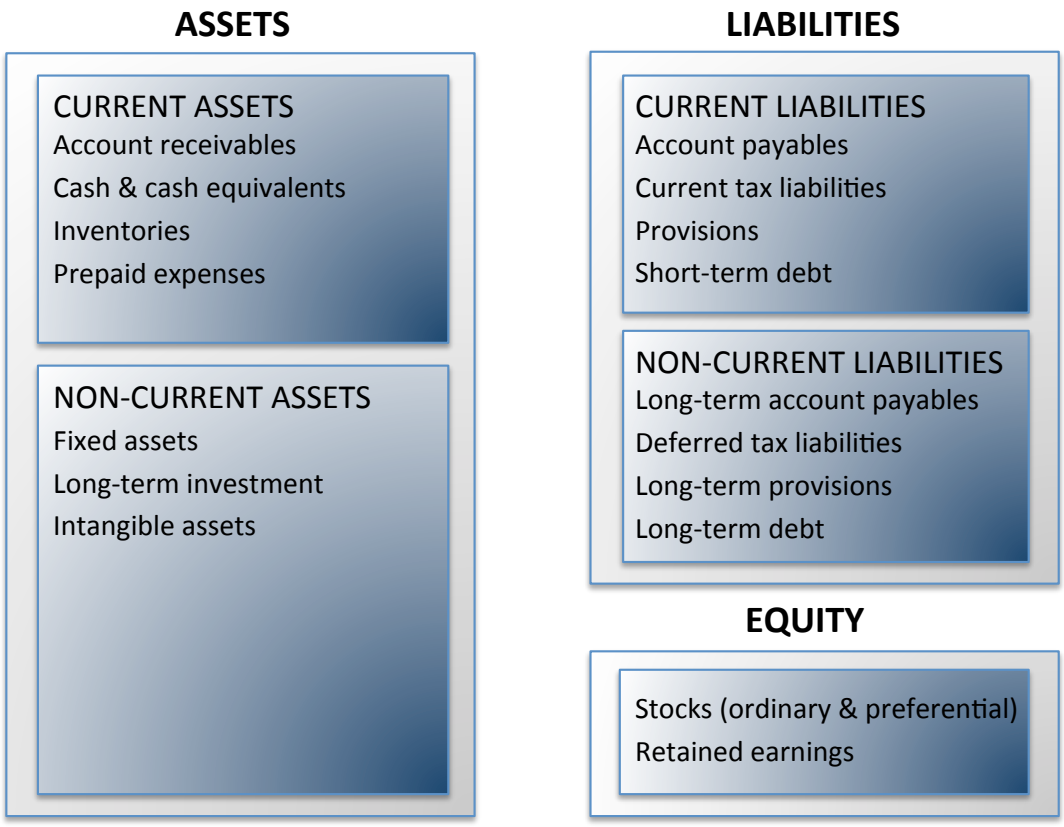
If the equity price and volume for which a listed corporation is sold are high their value has to be offset by intangible assets, that is total assets have to equal total equity plus total liabilities. Historically, the concern was that:

> 'the over-capitalization of industry, caused by the common practice of capitalising, in the form of fixed shares, an amount representing the computed value of goodwill, must often operate later on in the history of companies to cause such high levels of prices for the products as to be destructive to trade, just as would be caused, for instance, by the systematic over-staffing of industry' (Leake, 1938, p. viii).

Hence, the common view was that – as Lenin summarised it – 'this "over-capitalization" anticipated the monopoly profits' expected to be reaped in future on the basis of the patents, mining rights and whatever else was counted as goodwill of a listed company (Lenin, 1975[1917], p. 61). Today, overcapitalisation of non-financial corporations results in an increased desire to hold liquid assets on their part. While mainstream economics merely includes cash and cash equivalents in this liquidity preference, highly liquid financial

assets (even if with a maturity period of more than three months) can also be included.

Figure 3.1. Schematic representation of the balance sheet of a listed corporation



Source: Collier, 2012, Deloitte, 2011.

The two main motivations for this increased liquidity preference are given in (1) the precautionary motive, mostly advocated by empirical corporate finance studies (and also mentioned by Kalecki) and (2) the speculative motive, identified as a major aspect of non-financial companies' financialisation by heterodox economists. The thesis argues that both motives are compatible with non-financial corporations' overcapitalisation and, in fact, they often cannot be strictly distinguished. This will be illustrated in chapter 4.

Thus, overcapitalisation of non-financial firms increases firm heterogeneity among listed corporations. Now, not only size and competition patterns as suggested by Kalecki and Steindl, respectively, are distinguishing characteristics of non-financial companies. Additionally, different liquidity

management and investment strategies can be identified among listed non-financial corporations. Namely, non-financial corporates can be categorised as rentier firms or as entrepreneurial firms (Toporowski, 1993).

Rentier firms do not simply substitute productive for financial investment as sometimes suggested by the financialisation literature (see chapter 2). In fact, rentier firms choose a financial strategy to deal with the deficient demand and inherent financial fragility which have been exacerbated in advanced economies over the past three decades or so. The emergence of the rentier firm is crucially linked to changing financial market dynamics in the second half of the 20th century that led to the inflation of financial markets, especially, the inflation of equity prices in capital markets.

The origin of capital market inflation (theorised by Toporowski, 2000) can be found in the increasing influx of liquidity into capital markets due to regulatory changes and the growth of institutional financial investors, such as pension funds, in many advanced economies and particularly in the Anglo-Saxon markets. The growth of pension funds made the overcapitalisation of companies via share issuance easier, since institutional investors do not strive to take control of listed companies. Rather, they are passive investors. Equally, with the introduction of non-voting shares, ownership could be diluted without forgoing control. In South Africa, where issuance of non-voting shares was not common until the 1990s, complex pyramid structures to control listed corporations emerged to preserve control while overcapitalising (see section 3.3.3. below). Crucially, capital market inflation was a consequence of rising saving among middle class households after World War II, as flagged by Steindl. This leakage of funds in the industrial cycle can push non-financial firms into enforced indebtedness (Steindl, 1989).

The latter is a situation in which companies cannot recover their costs, making losses on production because households save instead of spending. As consequence, non-financial businesses reduce investment expenditure, further

aggravating losses because investment constitutes corporate profits in aggregate, as demonstrated in Kalecki's profit equation (see Toporowski, 2003). This is the Kalecki-Steindl theory of financial fragility (as coined by Toporowski, 2015).

With the petering out of the economic growth spurt of the 1950s and '60s – the so-called Fordist era, characterised by high output and productivity growth in advanced economies accompanied by almost full employment and steady wage growth, the wage bill came under pressure as the policy priorities of full employment and steady wage growth were pushed into the background. Both developments – rising middle class savings and slowing growth in working class income – put non-financial business more at risk of enforced indebtedness. For large and listed companies the emergent capital market inflation offered an alternative strategy to avoid balance sheet fragility and generate profits. In a nutshell, this alternative strategy relies on taking advantage of heightened volumes of liquidity present in capital markets during times of financial inflation. An important symptom of this behaviour among non-financial corporations is their overcapitalisation (Toporowski, 2008a, Toporowski, 2012).

Firm heterogeneity is crucial in this theory because not all non-financial firms suffer equally from enforced indebtedness. Oligopolistic companies will be able to capture a substantial share of total profits in the economy, in the attempt to ensure their own profitability. In consequence, if total investment falls short of covering the saving leakage, it will be competitive and most likely smaller and medium-sized enterprises that will suffer a financially fragile position rather than large oligopolistic non-financial business. Ironically, it is these oligopolistic non-financial corporations which are least likely to fall victim to enforced indebtedness, while being the most likely to be overcapitalised. As Steindl (1976[1952]) stressed, oligopolistic corporations would have the best access to capital markets, making it easy for them to issue equity during equity market booms.

But there also is firm heterogeneity among listed corporations. Not all listed non-financial corporations will pursue such a rentier firm type business strategy. As Karwowski & Shabani (2013) show, there is evidence of overcapitalisation among the top 30 Dow Jones (non-financial) companies. However, not all of them are identified as rentier firms. In the absence of inflating and deflating financial markets, most non-financial businesses were focusing on generating profit from production, while keeping their exposure to external finance – particularly equity financing – relatively low. This is the definition of an entrepreneurial firm (Toporowski, 1993). There are both entrepreneurial and rentier firms among the Dow Jones Industrial Average (non-financial) corporations.

3.2.2. The gearing ratio

The gearing ratio, a standard accounting ratio, is an important indicator of the soundness of companies' financial decisions. From a Kaleckian perspective, the amount of own assets a company holds limits its ability to acquire external finance at advantageous rates. Hence, the higher a company's gearing, that is, its debt to liquid assets ratio, the more difficult it will be to raise credit at an affordable cost, as creditors see the enterprise as increasingly risky and recovering their funds in case of bankruptcy as increasingly difficult.

The gearing ratio is used as the basis to devise a financial ratio that can identify overcapitalised non-financial firms. This ratio is called the overcapitalisation ratio (or OCR) and introduced in the following section. Meanwhile, the gearing ratio is discussed in greater detail to elucidate its theoretical importance.

The gearing ratio g (equation *3.1.*) brings together two variables crucially determining the financial position of an economic entity: indebtedness and liquidity. Recalling Mishkin's (1978) work on household balance sheets (mentioned in section 3.1.2.), these were the two variables found significant in explaining household aggregate expenditure.

(3.1.) $g = \frac{D}{L}$ where D = total debt

L = liquid assets

Non-financial firms – be they rentiers or entrepreneurs – will attempt to keep their gearing relatively low if possible. There are two ways to achieve this aim: either by keeping debt (D) low – the numerator in equation *3.1.* – or by raising liquidity (L) – the denominator. Hence, the gearing ratio of two companies A and B will be the same even though company A possesses a twice as large debt burden ($2D$) as company B (D), if A's liquid assets ($2L$) are also double the size of B's liquid assets (L):

(3.2.) $g_A = \frac{2D}{2L} = \frac{D}{L} = g_B$

Thus, if it is relatively easy to raise additional funds externally – such as for large listed companies during a phase of capital market inflation, when the influx of liquidity into the financial markets exceeds the new issuance of financial paper – the strategy of raising additional liquid assets becomes attractive for non-financial corporations.

Rising liquidity on non-financial corporations' balance sheets might, therefore, be connected to the wish to reduce gearing when debt volumes rise, resulting in a growing share of liquid assets in total assets (as observed by Iskandar-Datta, & Jia 2012 for the US, UK, Australia, Canada and Germany, and by Bates et al., 2009 for the US). Further, non-financial companies are likely to hold liquidity not only to counter debt but also equity. While equity is not a liability, it shares certain features with debt. Certainly, equity does not have to be repaid by the issuing company, since the investor has to sell the shares on in secondary markets to recover the initial investment plus (minus) a potential profit (loss). Nonetheless, listed companies are expected to pay dividends and sometimes also to buy back their own equity to stabilise or increase the share price.

From a balance sheet perspective debt and equity together have to be balanced by assets. This can be demonstrated using a schematic representation of a non-

financial corporation's balance sheet as presented in Figure 3.1. above. The schematic balance sheet is composed of assets (left column), which have to be matched by the sum of liabilities and equity (right column). Hence, in order to avoid a mismatch on the balance sheet (which erodes retained profits and can, at the extreme result in bankruptcy), the safest use for new funds raised through equity are liquid assets. This is the case because liquid assets cannot (or are at least much less likely to) abruptly lose in value due to business cycle swings or other adverse events. Consequently, holding liquid assets is much less uncertain than engaging in investment projects. Given the increased danger of enforced indebtedness for non-financial companies since the 1970s or so, uncertainty of investment projects is likely to be an imminent concern.

Thus, as argued above, rentier firms hold large liquid assets to counter their liabilities. This leaves us with the question why they obtain increasing volumes of external funds in the first place, in short: why are firms overcapitalising? Two motives are at work: precaution and speculation. Bringing the analysis back to the historical context of the second half of the 20th century, industrial circulation was facing a substantial leakage of household saving (Steindl, 1982). Hence, precaution called for a hedge against unforeseen losses from production and alternative sources of cash flow. Liquid assets are the ultimate insurance against a waning cash flow and unforeseen expenses since they can be instantly transformed into a one-off cash flow.

Furthermore, Kalecki (1991[1954]) stressed that returns on government bonds might constitute a welcome – even if low-yielding – stream of income in a situation where an investment project went wrong. The fact that safe financial assets – such as government securities – were typically (that is, given a regular yield curve) low-yielding constituted another reason to keep external liabilities to a minimum during Kalecki's times.

As Toporowski (2005) argues it was Steindl who theorised liquidity management (and overcapitalisation) among non-financial firms, stressing that

their increased need for liquidity would dampen investment spending. Given future payment commitments, non-financial companies are constrained by their liquidity in decisions about capital investment. Thus in order to keep gearing down, there are two options: either liquid assets are obtained at the cost of increasing liabilities, or investment spending is held back. Toporowski (2005) calls this the liquidity preference theory of investment. Thus, there is a trade-off between liquidity management and investment.

This thesis will argue that in South Africa the more common way for rentier firms to take advantage of financial markets in order to generate profit appears to be speculative merger and acquisition activity, substantially financed through liquidity held on the balance sheet. Chapter 4 will provide the empirical backing for this hypothesis. However, it is important to define the term speculation, since as chapter 4 will reveal, non-financial corporations in South Africa tend to speculate in productive assets rather than in financial investment, as often claimed in the financialisation literature.

3.2.3. Mergers and acquisitions

As pointed out by Penrose (2009, p. 136), the mergers and acquisitions activity of non-financial corporations does not have to be unproductive, 'surrounded by an aura of monopoly, collusion, and exploitation' and 'haunted by the ghosts of financiers'. Acquiring or selling businesses might simply be a consequence of companies' productive profit-seeking in a competitive market. Similarly, the term speculation as used in economic analysis can refer to a productive process. Schumpeter (1939) – and later Minsky – understood speculation as an entrepreneurial and innovative act. Schumpeter (1933) regarded industrial activity as deeply speculative, driven by entrepreneurs and financed by credit. Their activity is characterised by uncertainty and potential failure.

Similarly, Minsky's work (1986) – especially the two-price model – suggests an interpretation of the business cycle where non-financial companies' speculation on the price of productive assets, financed by bank credit, are the major driver

behind economic fluctuations. By contrast, this thesis will embrace Keynes's (1936) understanding of speculation, which defines it as investment for capital gains. Unlike speculation, enterprise involves investment for future income. This distinction accommodates Penrose's (2009) views on mergers and acquisitions, since she argued that trades in business units would take place if one company valued the future income stream from its own operations, or those of a subsidiary, less than the acquiring corporation does. Hence, according to Penrose mergers and acquisitions are productive when based on calculations about future business income, which in Keynes's terminology amounts to enterprise.

The rentier firm would undertake mergers and acquisitions in order to wait for a profitable opportunity to restructure and resell the acquired businesses, generating a one-off profit rather than an income stream. Thus, rentier firms are likely to possess much larger balance sheets than entrepreneurial companies, because their strategy to keep down gearing is to counter external liabilities with large volumes of liquidity. This liquidity can then be used for mergers and acquisitions and to counter any evaporation of goodwill. The latter is particularly important when investing into assets of an uncertain value, such as mining deposits, but would also apply to technological or pharmaceutical patents.

In order to further illuminate the interaction between non-financial firms' financial and real transactions Locke Anderson's balance sheet approach is helpful (Locke Anderson, 1964). According to Locke Anderson (1964, p. 31), firms' indebtedness and liquidity, which together constitute the gearing ratio, can be related to companies' productive operations through a simple formula:

(3.3.) $B = \Delta D^* - \Delta L$

B refers to the non-financial flow within a non-financial corporation for a specific period p, containing the sum of current cash payments for variable inputs, capital goods and dividends less the sum of current cash receipts from

sales and other income sources. ΔD^* describes all non-trade outside finance raised during p, while ΔL represents the change in liquid assets over the same time period. Importantly, D^* also includes equity as part of the firm's outside finance, in contrast to D used in equations *3.1.* and *3.2.* above, referring to total debt.

If productive operations generate sufficient income to meet current cash payments and dividends, that is if $B = 0$, additional external financing is not necessary ($\Delta D^* = 0$) as long as the company does not increase its liquidity holdings either ($\Delta L = 0$). If total income exceeds current payment obligations ($B < 0$) additional liquid assets can be financed internally ($\Delta L > 0$). These two scenarios would correspond to Kalecki's assumption that firms tend to finance their operations internally, while holding reserve accounts of retained earnings in liquid form.

However, if generated income falls short of current payments ($B > 0$) external financing will be necessary ($\Delta D^* > 0$). From the Keynesian perspective this would be commonly the case when investment expenditure increases. This view is also shared by textbook macroeconomics (see Mishkin, & Eakins, 2012), in which the corporate sector is understood to be in need of household savings supplied through financial intermediaries. In this situation a rising liquidity demand by non-financial business ($\Delta L > 0$) further exacerbates the need for external finance.

Locke Anderson described the corporate operations of non-financial companies in the 1950s and 1960s. Corporate activity has changed since then, as argued by heterodox economists (and discussed in the previous chapter). In Toporowski's (1993) terminology, Locke Anderson's framework centred on entrepreneurial firms that focus on trade while keeping financial transactions to a minimum.[5]

[5] Locke Anderson (1964, p. 35), for instance, asserted that equity issuance by listed manufacturing firms was a marginal phenomenon and could therefore be abstracted from in his analysis.

For this type of firm it makes sense to argue that companies have some minimum level of liquidity (L_{min}) they attempt to hold and a maximum level of external liabilities (D^*_{max}) they deem safe. This is simply an application of the principle of increasing risk, since the ratio between D^*_{max} and L_{min} provides the highest gearing ratio acceptable for the firm. The closer companies are to D^*_{max}, the more reluctant they will be to increase their debt burden even further and the less favourable borrowing conditions become for them. Equally, the closer firms are to the minimum threshold of liquidity L_{min} the more they will push to raise liquid assets. Hence, flows are constrained by stocks on the corporate balance sheet.

Liquidity and financing considerations have a profound impact on a company's investment expenditure. At least for the medium and long run non-financial companies' investment can be split up in – as Locke Anderson termed it – controllable and non-controllable investment (B_C and B_N, respectively).

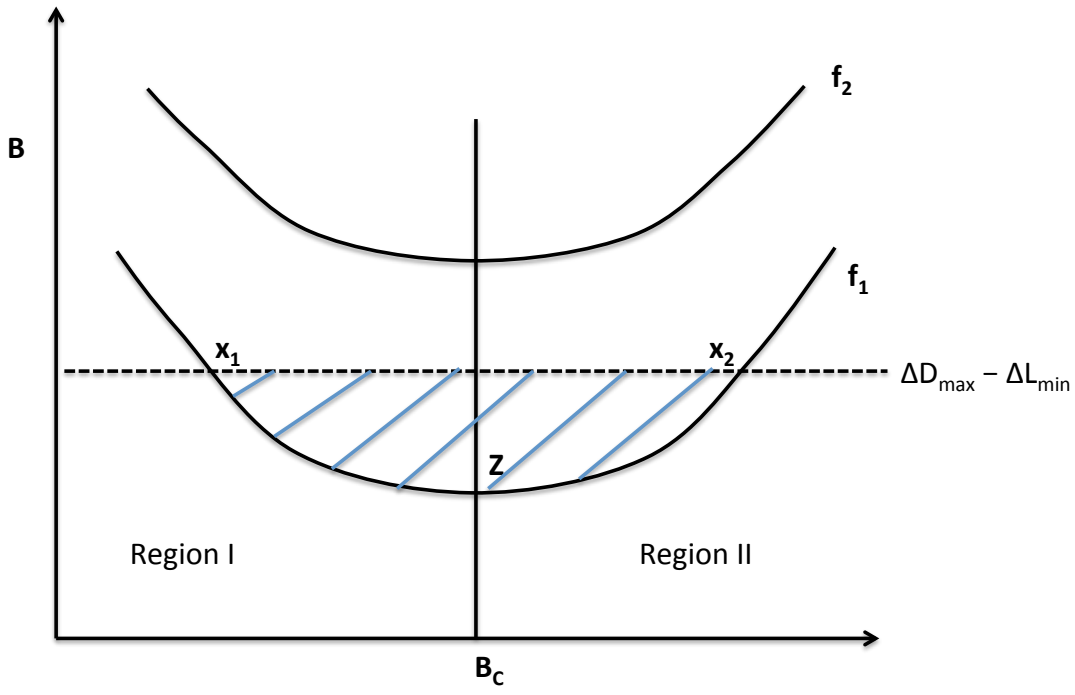
(3.4.) $B_C + B_N = \Delta D^* - \Delta L$

Thus, he assumed that there is a discretionary and a non-discretionary share in total investment expenditure. This view takes on Kalecki's distinction between the investment decision and actual investment expenditure. Once companies have entered an investment project they cannot walk away from it without substantial costs. This means that they are effectively locked into their investment.

Functions f_1 and f_2 in Figure 3.2. represent this relationship between controllable and non-controllable investment expenditure for an average plant. Investment here refers of course to productive (and not financial) investment, i.e. equipment and any other expenses necessary for a plant's production operations. The functions describe B, the cash outflow necessary for a firm's operations, and B_C, the share in this flow, which can be controlled, for two different companies, firm 1 and firm 2. According to Locke Anderson company 1 will aim to reach point x_2, since here controllable investment spending is

maximised while the company's debt burden remains unchanged. The line labelled $\Delta D_{max} - \Delta L_{min}$ represents the maximum amount of cash inflow the company can generate from financial operations, while observing its desired maximum debt levels as well as its desired minimum levels of liquidity. The functions f_1 and f_2 are U-shaped because initially (i.e. to the left of point x_2) a reduction in the share of controllable cash outflows in total operational spending will reduce the operational cost of the company (i.e. B). However, below a certain share (here Z) any further reduction in the share of controllable spending (in total investment spending) would result in income falling faster than costs with profits suffering (and B increasing).

Figure 3.2. Trade-off between investment and liquidity



Source: Adapted from Locke Anderson, 1964, p. 36.

If *B* exceeds what a firm can generate from its financial operations (represented by the line labelled) the company will be in deficit. This is the case for the company represented by f_2, let us call it company 2. Thus, company 2 has to run down its reserves – for example liquid assets – to cover the deficit. Once it has run out of reserves and other marketable assets the ultimate consequence of the persistent deficit will be its bankruptcy. Therefore, firm 1, represented by f_1, will

aim to remaining on the ($\Delta D_{max} - \Delta L_{min}$) line with its cash outflows, where it balances its income against its expenditure, or below that line. Below that line (i.e. in the blue shaded area) company 1 increases its liquidity holdings because funds raised in financial transactions exceed what is dedicated to the nonfinancial outflow *B*, meaning operational expenditure. If this firm operates anywhere in the blue shaded area in figure *3.2.*, it can build up overcapitalisation.

If we assume that the horizontal line ($\Delta D_{max} - \Delta L_{min}$) denotes financial transactions necessary to run productive operations, falling below point x_2 means for the firm that it is curtailing production in favour of its liquid asset holdings. Therefore, Locke Anderson stressed that going below x_2 would be non-optimal for firm profits. For him such a strategy was unattractive since reducing firm's controllable expenditure, as share in overall expenditure, on operations would generate progressively less profit, and finally losses, when pushed below x_1.

The implicit assumption is, however, that firms will aim at maximising their controllable investment spending by expanding productive operations through organic growth, financing as much investment spending as possible (i.e. aiming at point x_2 in figure 3.2.). For a company of the 1960s this might have been true. Nowadays, large listed companies – and especially multinational corporations – often grow and acquire R&D through mergers and acquisitions rather than organically (Serfati, 2008). In this manner, companies outsource (or buy in) specific aspects of their operations – for example R&D in the technology sector and resource exploration in the mining industry – to smaller enterprises. Such behaviour might be precautionary, but tends to have a speculative dimension. Acquiring businesses and their assets for speculative gains (à la Keynes) rather than entrepreneurial income creation (à la Penrose) is characteristic for rentier firms. Such a growth and innovation strategy also puts a stronger emphasis on controllable investment expenditure.

Takeover activity and trade in business units, patents and other R&D might be more controllable because the expenditure that underlies these transactions is typically one-off or takes place during a limited time horizon. This is an advantage for the involved non-financial corporation, since some layers of uncertainty are eliminated – investment projects often take much longer and absorb more funds than anticipated. More importantly, in highly innovative industries acquiring a developed (or even semi-developed) product or patent reduces the probability of investment failure.

The most obvious example for mergers and acquisitions motivated by this type of risk aversion is the trade in mining exploration companies that has become common in the mining industry since the 1990s, as will be discussed in the following chapter. Large mining companies often shy away from direct exploration, leaving it instead to smaller listed companies, in which they sometimes acquire stakes and typically buy out if exploration activity is successful. This example shows that precautionary and speculative motives often blur. As already argued by Steindl (1945), large non-financial corporations tend to be more cautious because they do not need to undertake risky investment in order to generate sufficient profit for survival, as smaller companies are often forced to do. Therefore, investing in pre-existing business units (through mergers and acquisitions) is a precautionary strategy. At the same time, mergers and acquisitions are often exercised in the hope of an increase in the value of the acquired asset. In South Africa, these assets are frequently mines.

The reduced uncertainty comes at a price since the purchase – of a business, patent or else – has to be paid for by a large lump sum. Therefore, shifting emphasis onto controllable investment and reducing uncontrollable nonfinancial trade flows – that is continuous investment outlay – requires a higher degree of liquidity. Hence, for rentier firms there is no optimal level of liquidity as suggested in Figure 3.2., where profits are maximised in point x_2.

The entrepreneurial firm supports the maximum volume of business operations in that point, given the necessary minimum level of liquidity. Since rentier firms also obtain profits from financial operations and mergers and acquisitions, they will aim at a much higher level of liquid assets, eliminating the line ($\Delta D_{max} - \Delta L_{min}$).

Notably, an active strategy of buying and selling corporate interest blurs the lines between financial and productive investment. According to the UN, if a foreign company acquires more than 10% of another corporations ordinary shares or voting power it is counted as foreign direct investment, i.e. productive investment. If that volume is smaller, it becomes portfolio investment, which is classified as financial. The chosen threshold appears rather arbitrary.

3.2.4. A methodology to measure overcapitalisation

In line with an alternative and comprehensive balance sheet approach the actual financial statement will be in the centre of the analysis to follow in chapter 4. This section proposes two financial ratios to support the analysis of overcapitalised non-financial firms in South Africa. The aim is to reveal their motivation for overcapitalisation, which according to mainstream and heterodox economic literature is mainly precautionary or mainly speculative, respectively.

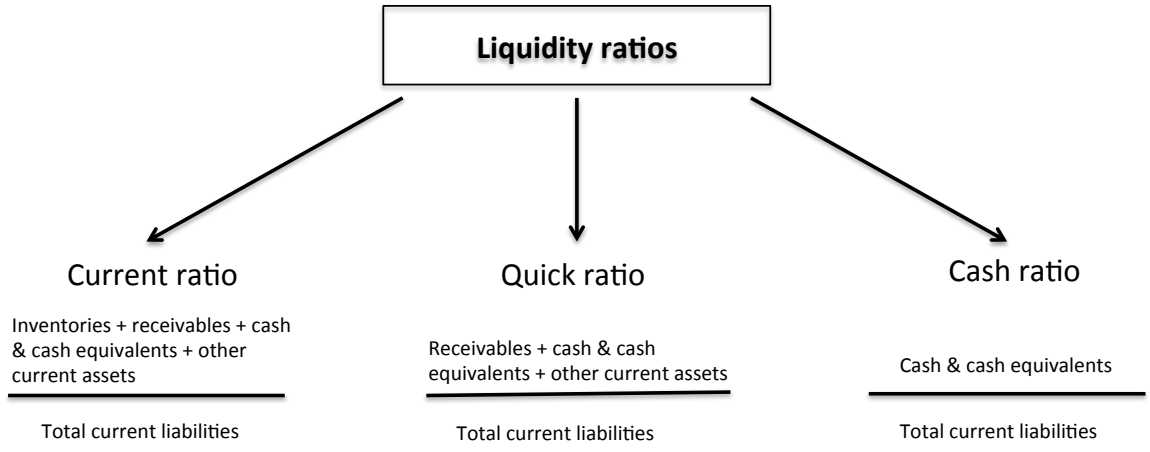
Non-financial firms that are overcapitalised, engaging in financial operations to acquire rentier income and/or speculate, will tend to actively acquire liquid assets. Therefore, liquidity ratios can be used to detect non-financial firms' overcapitalisation. Conventionally, there are three main liquidity ratios used to assess the soundness of non-financial companies' operations: (1) the current ratio, (2) the quick ratio and (3) the cash ratio. The focus on short-term assets and liabilities in the ratio analysis is deliberate since long-term balance sheet items are often expressed at historical cost, introducing problems of accurate valuation. Current balance sheet items are re-valued regularly, and are

therefore a fair reflection of a company's liquid assets and short-term payment commitments.

Historically, the current ratio measured as total current assets to total current liabilities was the first financial ratio to be developed and utilised for financial transactions (Horrigan, 1968). However, the current ratio is of limited use in measuring actual liquidity because it relates total current assets, including inventories, account receivables, cash and cash equivalents, as well as other current assets to total current liabilities (see Figure 3.3.).

In the course of the business cycle inventories and receivables might turn into illiquid assets. Similarly, inventories are typically built up in the early phases of an economic downswing and pile up during a recession, when by definition demand falls substantially. Therefore, the current ratio is likely to overestimate the actual liquidity of a company, especially during a cyclical downturn. This overestimation was recognised in the convention (widespread among U.S. banks for much of the 20th century) to ask for a current ratio of 2:1, when assessing a borrower's creditworthiness (Steffy et al., 1974).

Figure 3.3. Overview over the most common liquidity ratios



Source: Collier, 2012, Delta Publishing Company, 2006.

The quick ratio resembles the current ratio closely, with the decisive distinction that it excludes inventories from its calculation of liquidity (see Figure 3.3.). However, account receivables, which mostly refer to trade credit among firms (clients and suppliers) and sometimes to credit between firms and households,

might similarly become effectively non-performing loans during a cyclical downturn. During a business cycle bust, debtors might not be able to pay their commitments because they are facing declining demand for their products, adversely affecting cash flow. Recognising that firms' (and households') balance sheets are interlinked and assets are simultaneously liabilities, it is difficult to classify inventories and receivables as liquid assets.

Therefore, the cash ratio is the most suitable conventional accounting ratio to measure a firm's liquid holdings, since it takes only the most liquid assets into account, namely cash and cash equivalents (see Figure 3.3.). According to the International Financial Reporting Standards (IFRS)[6] cash refers to currency on hand and demand deposits with banks and other institutions. Other types of deposits are also included in the definition, as long as the customer may place and effectively withdraw funds at any time without prior warning or penalty (European Commission, 2003). Cash equivalents are short-term, highly-liquid investments that are readily convertible to known amounts of cash, meaning that there is insignificant risk of a change in value due to a change in underlying asset prices. Short-term refers to a time period of three months or less (European Commission, 2003, Deloitte, 2011). Examples of cash equivalents are government bonds and money market funds. Typically, equity is not classified as cash equivalent on financial statements but under marketable securities (Deloitte, 2011).

(3.11.) $$Cash\ ratio = \frac{Cash\ and\ cash\ equivalents}{Total\ current\ liabilities}$$

The distinction between positions, which are held for operational, investment or financing purposes and those accumulated to simply obtain financial profits

[6] IFRS are the attempt to harmonise financial reporting standards across the European Union, which made them attractive internationally and they were subsequently also implemented in a range of OECD countries, but also in emerging markets such as Brazil, Russia and South Africa. They are sometimes still called by their original name (International Accounting Standards). South Africa implemented the IFRS in 2005 (Collier, 2012; van Greuning, 2006, for South Africa see UNCTAD Trade and Development Board, 2007).

and speculative gains, is not clear-cut. The same liquid assets can be held for multiple purposes. They could be acquired to generate supplementary financial or speculative income (precautionary and speculative motive). Also, non-financial companies are in need of liquid assets to address short-falls in their cash flow during re-occurring business cycle downswing, that is out of a precautionary motive.

Some authors suggest a cash ratio of around 20% for non-financial firms is advisable (Wöltje, 2012). However, conventions and levels of precaution are likely to vary from country to country and industry to industry. Therefore, picking a numerical threshold to determine non-financial firms' overcapitalisation might be too simplistic – if easy and elegant to implement.

A sounder approach would be to choose a relative threshold. Overcapitalisation highlights the blurring boundaries between financial and non-financial corporations. Consequently, a liquidity threshold at which these two types of corporations cannot be distinguished from each other should be identified. Since financial firms among themselves are also very diverse, some average of one or several highly liquid financial industries could be found as liquidity threshold for overcapitalisation.

Finally, one threshold appears to offer itself readily for the purpose of identifying a speculative motive for liquidity demand of non-financial firms: the cash ratio of 1 (or 100%). Even for a very conservative non-financial company holding liquid assets beyond the volume of current liabilities cannot be justified by the precautionary motive. The view that a cash ratio of 1 is exaggerated as precautionary measure is also common sense among accountants (Peavler, 2014).

Strictly speaking, the cash ratio does not capture overcapitalisation fully, since it does not contain liquid assets and investments, which are undertaken for longer than three months. These are often referred to as short-term investment or marketable securities, classified as financial investment either under current

or non-current assets. In the case of current assets the maturity period is up to one year, or alternatively the company has the intention to sell the asset during that period. For non-current assets the maturity period exceeds one year and sometimes – such as in the case of marketable securities or business units acquired and held for sale at a not yet specified date – the asset does not mature at all, but is sold on subsequently. It is important to include these investments to avoid understating the full extent of a firm's overcapitalisation.

Hence, to measure the true extent of overcapitalisation an overcapitalisation ratio (OCR) has to be constructed, which reveals assets that are held to generate financial income and/or for speculative profit. The OCR relates cash and cash equivalents but also marketable securities and other financial and productive assets, that potentially generate rentier income, to total current liabilities.

(3.12.) $Overcapitalisation\ ratio\ (OCR) = \frac{Assets\ generating\ rentier\ income}{Total\ current\ liabilities}$

The strength of the OCR is that, in contrast to liquidity ratios, it also incorporates long-term financial investment, which would be part of a company's non-current assets. In this sense, the OCR is more prone to the liquidity illusion (Nesvetailova, 2008) than the cash ratio, since some financial investment might be highly liquid during times of capital market inflation but become illiquid once the tide turns towards a financially deflationary situation.

Nevertheless, the OCR can help us to measure the extent of non-financial firms' rentier activity, especially since the ratio is aimed at including financial and productive assets that non-financial companies acquire for later sale. This means the OCR reflects to a large extent companies' intentions declared in the financial statement and its construction is dependent on qualitative financial analysis, that is the comprehensive balance sheet approach, and lends itself to case study analysis.

Admittedly, a high OCR can be driven by varying motives of non-financial companies to hold liquid assets. The theoretical discussion in the previous

chapter revealed that precaution and speculation are the two most influential motives. Equally, industry-specific reasons for high liquid asset holdings could be at play. Therefore, in the following chapter the OCR is used as an analytical tool to identify potential cases of company's involvement in rentier investment. A large difference between the cash ratio and OCR for a given firm flags such an involvement. Like any financial ratio it will have to be supplemented by further qualitative information. Therefore, the reason for the identified companies' rentier investment is analysed, using comprehensive balance sheet analysis.

Crucially, the next chapter will show large volumes of liquid assets are often held by companies that speculate in real assets. These companies buy and sell subsidiaries to generate capital gains. Typically, this mergers and acquisitions activity is accounted for under non-current assets on the balance sheet where newly acquired (or sold) business units are declared. Often, these entities are moved to the current assets section of the balance sheet when mergers and acquisitions negotiations are under way, or the parent company has signalled its willingness to sell the unit. Of course, as pointed out by Penrose (2009), mergers and acquisitions activity does not automatically imply rentier profit and intent.

However, if a non-financial firm's OCR repeatedly exceeds its cash ratio due to both, buying *and* selling of subsidiaries this is evidence of speculation on productive assets such as subsidiaries and other business units. If a company aims at rapid growth, it would concentrate on acquisitions. While occasional sales of business units might occur due to changing investment strategies, falling profitability or other reasons, frequent buying and selling practically equates to dealing in subsidiaries to make a capital gain.

Summarising, two financial ratios are suggested to analyse sectoral and individual balance sheets, namely the cash ratio and the OCR, which will be applied to the South African economy and JSE-listed companies in the following chapter.

$$(3.13.)\ Cash\ ratio\ = \frac{Cash\ and\ cash\ equivalents}{Total\ current\ liabilities}$$

$$(3.14.)\ OCR\ = \frac{Cash\ and\ cash\ equivalents + current\ financial\ assets + noncurrent\ financial\ assets}{Total\ current\ liabilities}$$

The comparison of the cash ratio to the OCR will reveal how much overcapitalisation is concealed through the balance sheet structure and presentation of financial results. In chapter 4, JSE-listed non-financial corporations will be assessed for overcapitalisation using these two suggested tools. Importantly, the balance sheet analysis does not stop there, but only commences. The proposed ratios are merely instrumental in identifying those non-financial corporations, which are potentially overcapitalised. Subsequently, their financial statements and full annual reports will be analysed to answer the questions formulated in the previous chapter: (1) What role do financial operations play in these companies? And (3) why might their liquidity preference have increased over the past decades?

Question (2) which addresses the type of non-financial companies that are examined can be answered on the basis of the chosen methodology. Such detailed financial statement analysis is more easily conducted for listed corporations than other companies, due to the legal requirements to disclose information, which listed businesses face. Nonetheless, considerations about firm heterogeneity are an important aspect of balance sheet analysis. Therefore, the next section will provide an overview of the business landscape in South Africa, which will inform the empirical analyses of chapters 4 and especially 7.

3.3. A balance sheet approach for South African non-financial firms

As pointed out in section 3.1., financial ratios are merely analytical tools. In order to apply them correctly the researcher requires a good grasp of a company's business and the peculiarities of its trade (see, for instance, Morley, 1984). Since the author is proposing to use financial ratio analysis (alongside other analytical tools) to assess whether South African non-financial corporations are overcapitalised, knowledge of the peculiarities of the country's

corporate landscape is essential. Therefore, this section will shed light on the emergence of capitalist enterprises in South Africa (in part 3.3.1.). Here, the development of mining-finance houses and dominant company groups was central (part 3.3.2.). South Africa's economic history explains the presence of large monopolistic companies in the country as well as the marginalisation of small and medium-sized enterprises (discussed in section 3.3.3.).

3.3.1. The emergence of capitalist firms

The first capitalist companies to emerge in what would later become South Africa, that is, companies which depended on wage labour on a substantial scale, formed in the mining sector towards the end of the 19th century. Prior to that, economic production in the Cape Colonies was characterised mostly by subsistence activity, petty commodity producers and artisan production.

Cape Town was founded in 1652 by the Dutch East India Company (the *Vereenigde Oostindische Compagnie* as it is called in Dutch) as a stopover on the way from Europe to East Asia, especially Indonesia, where the company had established trading posts in the early 17th century. During most of the 17th and 18th centuries the colony ran large trade deficits, as many goods had to be imported from Europe, because the Dutch East India Company discouraged local production as far as possible, aiming to keep competition for their companies in Holland down (Feinstein, 2005).

Most of the commercial activity took place along the coasts in the two British territories: the Cape Colony and the Natal Colony. The hinterland, in contrast, was sparsely populated by Dutch-origin farmers (the Afrikaner or Boer), who tracked out there to avoid British rule (mainly taxation and the abolition of slavery, see Sparks, 1990). The two Afrikaner territories, the Orange Free State and the South African Republic (or the Transvaal), emerged in the arid *veld* around the mid-19th century.

Their inhabitants produced most of their food and clothing, as well as household products such as soap and candles, at home because their cash

incomes were too meagre to purchase these goods (Feinstein, 2005). Thus, there was little trade activity in these rural territories. In fact, they were so unattractive economically that local commercial banks, which were set up for the first time in 1837 in Cape Town, only made it there 40 years later (Arndt, 1928).[7]

However, when gold and diamonds were discovered in the Transvaal and Orange Free State in the second half of the 19th century, economic activity around the gold-digging town of Johannesburg and the diamond fields of Kimberly surged. Consequently, political interest in the resource-rich territories awoke in the British authorities. It took two wars and one failed insurrection to bring the Afrikaner republics under British rule by 1902. In 1910, all four colonies: the Cape Colony, Natal Colony, the Orange Free State (the Orange River Colony since 1902) and the South African Republic (the Transvaal Colony since 1902) were unified to form the Union of South Africa, a dominion of the British Empire.

Mining interests were not only decisive in the formation of South Africa as a state, but also in the emergence of capitalist labour relations (Turrell, 1987). The diamond and gold mines required vast amounts of cheap labour. Large diamond and gold mining companies emerged in the late 19th century, concentrating the majority of mining claims in the hands of a few mining-finance houses (Kubicek, 1979). The history of these houses and their interaction with local and foreign financial institutions is discussed in detail in chapter 6.

The mining groups pushed for the impoverishment of the native population, to a large degree stripping them of the means of subsistence and turning them into 'free' wage labourers. The Chamber of Mines, formed in 1887 and until today the representation of mining sector interests, was instrumental in this process. During the early years of the gold rush on the Witwatersrand black gold diggers could hold mining claims. This was banned. Land was increasingly

[7] See chapter 6.

seized from black farmers, either forcefully or under the cloak of taxation. A so-called 'hut tax' was introduced on native land, which these subsistence farmers increasingly struggled to meet. As a result a growing number of black South Africans was left without means, forcing them into wage labour in the mines (Innes, 1984).

The cost-cutting measures of large mining companies like Anglo American left, however, little room for small and medium-sized enterprises to grow around the mines, where a rising number of workers congregated. On the one hand, black miners were miserably paid: in 1911 white miners earned twelve times the cash wage of black miners. At its peak, during the 1970s, the ratio of white to black real cash wages was 21:1 (Lipton, 1980). Even in 1975, after a wave of wage increases for black workers, average African earnings per month in agriculture, mining, commerce and government were substantially below R100, meaning below the poverty line at that time, defined by the official Johannesburg Household Subsistence Level of R120 (Keenan, 1983).

On the other hand, most goods and services needed by black miners were provided through the mining groups. Black workers were housed in a compound, which effectively operated like a prison (Innes, 1984). Food was provided as part of their remuneration, while a brewery run by the mining company was also present in the compound (Limebeer, 1951). Thus, there were very limited business opportunities for traders or retailers around the mine compounds.

Much of the early capitalist firms that formed outside of the mining sector were closely linked to mining activity. The big mining groups financed and took direct control of manufacturing production, which fed into their mining activity. The earliest example are the efforts by De Beers – majority-owned by the Anglo American group – to establish a domestic explosives manufacturer in the 1890s (Innes, 1984). This was done to once again cut costs, which given an internationally set gold price directly translated into increased profit.

At the turn of the 20th century, some manufacturing firms were present in the Transvaal, in proximity to the mines, which were able to produce high quality heavy machinery (and other metal-works) for the needs of mining companies. Manufacturers of light consumer goods (such as textiles, leather goods and furniture) emerged during World War I as South Africa was cut off from European imports (Feinstein, 2005). Thus, the first significant wave of small and medium-sized enterprise development in South Africa occurred as recently as 100 years ago. At that point large-scale mining activity had been under way for thirty years or so. The value added of manufacturing companies was low, because most of the inputs had to be imported from Britain. Even after World War I, which provided an impetus to local manufacturing, 97% of material used in the metal and engineering industry (the single biggest area of employment outside of mining at that point) was imported (Magubane, 1990).

Local production and companies experienced a major stimulus in 1924 when the newly elected Pact Government[8] adopted a manufacturing-promoting policy of import-substituting industrialisation. The aim of the policy was to create large numbers of jobs in manufacturing for unskilled poor white workers, who made up a large part of the Pact Government's electorate. Thus, tariffs for many imported goods (with the exception of raw materials needed in mining and manufacturing) were either introduced or raised in the revised Customs Tariff Act of 1925 (Feinstein, 2005).

While these measures helped the establishment of local companies, the industrial policies adopted arguably favoured large-scale business. This became especially evident with the establishment of the state-owned Electricity Supply Commission (ESCOM) in 1923 and the creation of the Iron and Steel Industrial Corporation (ISCOR) in 1928 (Feinstein, 2005). Both supported the emergence of large-scale capital-intensive producers of heavy machinery. Importantly, both

[8] A political alliance between an emergent Afrikaner bourgeoisie and Afrikaner working class was the basis for a 'pact' between the National Party and the Labour Party (Murray, 1982).

also benefitted mining activity, which itself is energy- and capital-intensive, requiring heavy machinery for production.

Therefore, much of South Africa's manufacturing established in the early 20th century was closely linked to the mining industry. This changed somewhat during World War II, which once again resulted in a complete halt of manufacturing imports. This time, however, with industrial policies in place and an existing (if nascent) consumer goods industry present, the war years proved a substantial development spur. This spilled over into heavy manufacturing, as ammunition and other war equipment was produced in South Africa (Feinstein, 2005).

The two decades after World War II were characterised by strong economic expansion in South Africa, favouring growth in the manufacturing and service industries. The number of small non-financial companies grew strongly in the retail sector, even including growth in non-white-owned businesses. According to official government statistics, there were 761 black-owned retail outlets and one wholesaler in South Africa in the mid-1940s. By the early 1950s, 1,135 black-owned retailers and 21 black-owned wholesalers existed. In contrast, the number of white-owned retailers in the early 1950s was twenty-five times as high. Other non-white South Africans (especially South Africans of Indian decent) were somewhat less marginalised in business than black South Africans. Despite this racial discrimination the number of black-owned (small) businesses grew dynamically in the post-war era. By 1960, there were 16,000 black-owned retailers (Mkele, 1960). Of course, these figures remained small for a country with an estimated population of around 17 million people in 1960.

The emergence of black small businesses (or petty capitalists) was hindered by legislation, which intended to limit competition for white businesses, while keeping the black population out of the cities, where they were regarded as mere 'sojourners' (Feinstein, 2005). Under apartheid, from the 1940s onwards it was hardly possible for black South Africans to own land. This meant that

entrepreneurs did not have the possibility to use property as collateral for a start-up loan, for instance. The Native (Urban Areas) Consolidation Act of 1945 severely restricted black entrepreneurs' opportunities to invest or access finance, by limiting interest, share capital or deposits of 'natives' in any financial institution to not more than 20% (Mkele, 1960).

Unsurprisingly and intentionally, apartheid legislation seriously retarded the development of non-white (and especially black) business. Since black workers only earned a fraction of the 'white' wage (Feinstein, 2005), there was little possibility to accumulate capital for entrepreneurial purposes out of wage income. Combined with the exclusion from financial intermediaries, this meant that for a long time most black retailers were forced to concentrate on light consumer goods, such as food, rather than white goods or furniture, which most black South Africans bought from 'white' businesses in the towns where they spent their working days (Mkele, 1960). Only in the 1980s more legal space for black businesses was created (Rogerson, 1987). As consequence, by the late 1980s the share of black South African who were self-employed was estimated to be merely 1.8%, while this share was 10.6% among white South Africa and 8.6% among South African's of Asian descent (Friedland, 1987).

The industrial policy of the apartheid government aimed in particular at supporting the emergence of an Afrikaner capitalist class. The Dutch-origin population was traditionally engaged in agriculture, while many of the industrial interests were (at least perceived to be) in South African-British hands. [9] Financial institutions like SANLAM (Suid-Afrikaanse Nasionale Lewensassuransie Maatskappy[10], established in 1918) and Volkskas (established in 1934) were founded to back small and medium-sized Afrikaner businesses

[9] Large corporations like Anglo American or General Mining were backed by international (that is British, American, German and other European) investors, while the families running these interests (such as the Oppenheimers of Anglo American) were of European, but not necessarily British, decent. Anyone who was not an Afrikaner seemed to have been labeled as foreign or British.

[10] The South African National Life Assurance Company.

(Magubane, 1990). Nevertheless, given the barriers for black business activity, apartheid legislation is likely to have seriously hindered the development of small and medium-sized enterprises in South Africa, explaining the comparatively small size of the sector today (see section 3.3.3.).

The attitude of the apartheid government towards African businesses, which were mostly small and informal, only changed when South Africa's economic decline during the 1980s meant that employment growth stagnated and formal sector employment, especially in large-scale manufacturing, contracted (Rogerson, 1987). Then informal and small business was promoted as employment creators, for instance through the launch of the Small Business Development Corporation in 1981, which had the mandate to assist small entrepreneurs. Previously, informal activity was illegally undertaken in urban centres. Despite this pragmatic change of heart, in practice the support from apartheid authorities was undertaken in many cases grudgingly (as the struggle of black hawkers for trading space in most towns during the 1980s exemplifies, Rogerson, 1989).

In consequence, many black businesses remained informal and non-licenced. This benefitted formal (mostly white) businesses, which often subcontracted light manufacturing such as the production of clothing, furniture and metal goods to informal manufacturers, who were able to operate without adhering to minimum wage and work place regulations. One example documented in a survey on small-scale industry in Katlehong (situated east of Johannesburg) during the mid-1980s is that of a small packaging firm, supplying the US-based multinational firm 3M. The owner of the small business was a previous 3M employee, encouraged by 3M to set up his own business. Surveys undertaken in other townships (such as Orlando West in Johannesburg) suggest similar ties between informal and formal businesses (Rogerson, 1987).

The interlocking of informal, often African-owned, small non-financial firms and established formal-sector typically white-owned non-financial companies

seems especially strong in the brewing and distilling sector. Large South African companies like South African Breweries used shabeens, informal bars mostly run by black South Africans, as distributional channels for their alcohol. This informal distributional link was important and lucrative, since during the 1980s 40% of liquor sales in South Africa were deemed to happen through informal vendors (Rogerson, 1987). Similarly, formal-sector retailers and wholesalers enlisted informal hawkers to sell their produce (especially clothing and newspapers) (Rogerson, 1989). This link between formal and informal business means that a significant share of business activity was undertaken through informal entrepreneurs or firms. This observation will be important when interpreting the flow-of-funds data in chapter 7.

3.3.2. The mining-finance houses and dominant company groups

When considering large businesses, the growth of the 1950s and '60s appears to have induced a diversification of economic activity in South Africa, at least on the face of it. As documented in Table 3.1., by 1953 the majority of corporations listed on the South African stock exchange were classified as industrial companies. Between the early 1940s and the early 1950s the number of listed industrial corporations grew more than fivefold. The finance industry had experienced an even stronger listing boom, while the number of mining corporations only rose slightly, indicating the maturity of the sector.

Table 3.1. JSE-listed corporations by sector, number and market value

	Number of companies listed				
	1932	1942	1953	1962	1974
Mining	102	121	144	138	71
Finance	17	24	143	134	154
Industry	32	71	401	337	354
	Market value (R million)				
Mining	200	728	1483	2731	9411
Finance	78	245	647	1708	6628
Industry	29	175	594	1055	3492

Source: Andrews, 1975, p. 122.

Despite this apparent shift in dominance towards industrial activity among listed corporations, many of the supposed industrial firms listed were

effectively part of mining-finance groups. Fine and Rustomjee (1996) showed that in 1990 mining alone contributed 12% to domestic output, while South Africa's mineral energy complex, that is mining together with manufacturing and energy production that serve as immediate inputs to mining activity, generated 25% of GDP. More importantly, much of South African business activity is undertaken by large listed corporations.

The first listed corporations in South Africa were mining companies. The capital-intensive nature of mining in the country favoured the emergence of large, and influential, mining-finance houses. Chapter 6 discusses the history of these mining-finance houses in detail. Here, their connection to the large company groups that have dominated the South African economy until recently (and arguably still do, if to a lesser extent) will be traced.

The term company group (much like mining-finance house) has a specific connotation in South Africa, and is commonly used when referring to one of the large five holding companies that have dominated the JSE during the 1980s. As laid out in the 1973 Companies Act, the term group of companies describes the existence of several companies that are associated as a result of common or interlocking shareholdings. A group of companies is legally understood to share management and policy direction through a shared controlling authority. This definition was renewed in the 2008 Companies Act, which further added that a company group also exists where the same or related persons control a number of companies, even if the firms do not have other common interest (Davis & Mongalo, 2013).

Historically, the South African economy has been moulded by large diversified business holdings and their oligopolistic competition (see Fine & Rustomjee, 1996). The economic slowdown and protracted recession of the 1970s and the political isolation of the 1980s intensified this trend, resulting in further centralisation and industry concentration. As many weaker competitors were

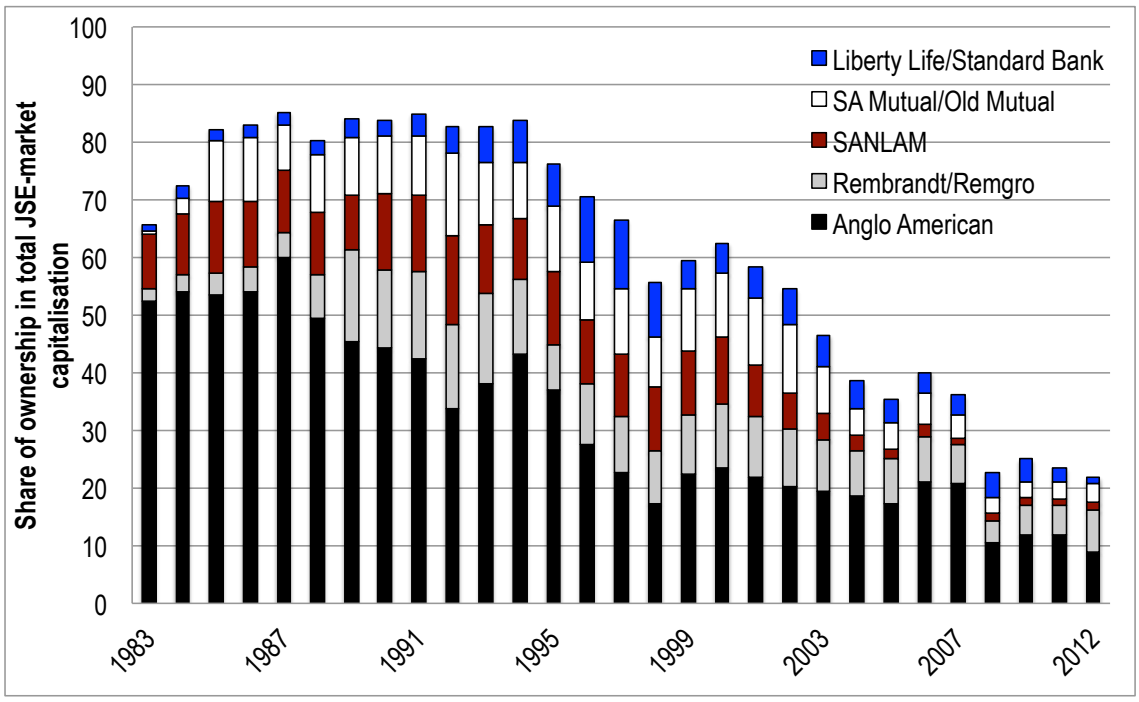
pushed out of the market and foreign investors exited, domestic firms were often bought up by one of the dominant company groups (Innes, 1984).

As a result, more than 80% of JSE-listed companies – as measured by market capitalisation – were owned by one of the top five conglomerates by the mid-1980s. These big five were: Anglo American/De Beers, Rembrandt/Remgro, SANLAM, SA Mutual/Old Mutual and Liberty Life/Standard Bank. Sometimes this group is enlarged by Anglovaal, becoming the big six. Anglo American/De Beers and Anglovaal can be traced back to the big ten mining-finance houses, which emerged in the beginning of the 20th century, due to the large scale of financial investment required for diamond and gold extraction (see chapter 6 for a historical exposition). SANLAM, Liberty Life/Standard Bank and Old Mutual formed as South African institutional investors (insurers and pension funds), while Rembrandt/Remgro grew mainly on the back of its tobacco and cigarette production. These company groups diversified into a broad range of economic activity in South Africa. The disinvestment of foreign companies accelerated during the 1980s, when international sanctions were imposed onto South Africa due to its racial policies (The Commonwealth Secretariat, 1989).

During the 1980s, for instance, Anglo American owned numerous gold, diamond and other mineral mines in South Africa, while holding interest in the South African bank FNB, and Anglo's Industrial Corporation (AMIC) held the group's manufacturing interests which, for instance, included Mondi Paper and South African Breweries. The mining corporation Gencor (which later unbundled BHP Billiton) was part of the SANLAM group alongside Trust Bank, Santambank and Senbank. At the same time, Rembrandt/Remgro was involved in mining – through Remgro – while being closely connected to the South African commercial bank Volkskas, and SA Mutual/Old Mutual incorporated Rand Mines as well as Nedbank under its umbrella, a large mining company and bank, respectively (Fine & Rustomjee, 1996, Chabane, Goldstein, & Roberts, 2006).

Figure 3.4. shows the share of JSE-market capitalisation the top five company groups controlled through their ownership of other listed and non-listed companies. Anglovaal has been left out since it hardly ever controlled more than 3% of market capitalisation, and in fact ceased to exist in 1997. The five company groups depicted controlled almost 90% of all companies listed on the JSE between the late 1980s and the mid-1990s. Importantly, the most influential among these company groups has been and remains Anglo American.

Figure 3.4. JSE-market capitalisation of top 5 company groups, 1983-2012



Source: Rossouw, van der Watt, & Malan, 2002, Ashman, Mohamed, & Newman, 2013, Makhaya & Roberts, 2014.

The dominance of these company groups started to fade during the late 1990s with the so-called unbundling process. Unbundling refers to the reorganisation of large South African companies – mainly the oligopolistic company groups – after the end of apartheid. Large South African corporations were often characterised by pyramid control structures, cross-holdings and a low incidence of change in corporate control (Malherbe & Segal, 2001). The declared aim of unbundling was to simplify company structures, which were meant to increase foreign investors' confidence in South African conglomerates. An important argument at the time was that listed South African company groups traded at a

discount on the JSE because of their non-transparent organisational structures (Davidson, 1997). The pyramid structures had formed to preserve the controlling share of influential shareholders (often families like the Oppenheimers in Anglo American or the Ruperts in Rembrandt/Remgro), while avoiding the issuance of non-voting shares. This is a historic specificity of the South African capital market.[11]

If a company group intended to raise additional funds through equity issuance, a new corporate entity was founded, which was allocated the family's 50% majority shareholding in the business operations of the actual operating enterprise. The new entity was then floated and the family retained a controlling share in this newly founded corporate unit, while raising capital through the sale of the remaining shares. In this way, the controlling shareholders had diluted their ownership of the underlying business to 25%, while preserving control (Barr & Kantor, 1994). This practice came under criticism during the 1990s since it differs from the Anglo-Saxon convention of establishing large holding companies, under whose umbrella the individual business units that are part of the group are run. In this alternative model, control is preserved through the issuance of non-voting shares. The South African corporate architecture of listed companies was further complicated by the fact that a listed company also had stakes in non-listed businesses, which were wholly owned by the company group, often through a web of complicated pyramid holdings.

It is questionable how much of a discount there really was on South African corporate shares. The argument that South African corporations could raise capital more cheaply in domestic and international markets if ownership structures were simplified rested on the claim that the asset values of these companies were above their market capitalisation. The market capitalisation of

[11] Similar corporate ownership arrangements can be found in Sweden and some East Asian countries.

the top layer of these pyramids was contrasted with the individual capitalisations of listed companies that were part of the group plus the management's valuation of company assets (Barr & Kantor, 1994). The latter was solely based on manager's estimates how much unlisted wholly owned companies were worth. These estimates were taken at face value for lack of a better pricing method. However, these estimates might of course have been erroneous. Moreover, managers had an intrinsic interest to value their assets as highly as possible to portray the company group as a profitable investment to their shareholders.

Nevertheless, the argument that unbundling would increase corporation's share prices became a powerful justification for the split-up of these groups and the abolishment of pyramid structures among large holding companies. Thus, at the end of the 1980s 7% of all companies listed on the JSE were characterised by pyramid ownership arrangements, while the share declined to 3% by the late 1990s (Malherbe & Segal, 2001). The implicit promise underlying the unbundling process was one of increased competition and higher investment in the South African economy, if the domestic dominance of the groups could be reduced. The idea was that more diversified ownership would increase market competition. In addition, the higher share prices expected to be fetched by South African listed companies would increase domestic investment by these groups, since their cost of external capital would be reduced.

The debate exemplifies the belief that non-financial corporations use their financial dealings to support productive operations, and especially for investment funding. As will be shown in chapter 7, much of South African investment (in aggregate) was historically financed internally rather than through borrowing or share capital. This has changed somewhat since the end of apartheid, but the shift has been more towards bank loans rather than capital markets as source of funding.

Overall, the big five internationalised during the 1990s, buying assets and incorporating companies abroad while selling off their non-core business interests in South Africa. Table 3.2. summarises the developments in the holdings of the big five company groups, comparing their ownership structure in the late 1980s to that of 2014. The table provides information on the five company groups' origins (in columns two and three) as well as their subsidiaries in the late 1980s (columns four, five and six) and today (columns seven and eight). These five company groups are Anglo American, Rembrandt (later Remgro), SANLAM, SA Mutual (later Old Mutual) and Liberty Life. Data for 1988 were compiled by Isaacs (2014) based on Chabane, Goldstein, & Roberts (2006) and Fine & Rustomjee (1996). Recent data are based on INET BFA (2015). It goes beyond the scope of this thesis to discuss the business histories of these five in more detail. Crucially, the big five, which controlled close to 90% of all JSE-listed companies during the late 1980s, have since unbundled and refocused on their core business.

This means that they transformed themselves from highly diversified conglomerates, often holding financial, mining, industrial and business interests, into more specialised groups with a strong international orientation in their operations (see also Verhoef, 2010 for a discussion of this trend). Another political promise of unbundling was that more diversified ownership would also mean more inclusive ownership for black South Africans. Unbundling became a tool of black economic empowerment (BEE). Thus, in the late 1990s black-owned holding companies were set up, which borrowed in order to debt-finance the acquisition of corporate interests. The South African financial press estimated that BEE ownership of JSE-listed shares increased from 0.5% in 1995 to somewhere between 6% and 20% by 1998 (Carmody, 2002). According to INET BFA, a financial investment intelligence company, the 1998 figure was

much lower (9.6%)[12] than this optimistic estimate. Unbundling suited the large South African company groups. On the one hand, profits from selling off non-core assets could be transferred abroad. This fitted neatly into the business strategies of Anglo American, BHP Billiton (formerly part of the SANLAM group) and Old Mutual, which all transferred their primary listing to the London Stock Exchange around the turn of the millennium (Malherbe & Segal, 2001).[13]

Pádraig Carmody (2002) argues that unbundling helped South African company groups reduce their exposure to the volatile South African capital market, while making their shares more attractive for investment funds through a membership in the Financial Times Stock Exchange 100 index, for instance. How successful black economic empowerment through equity investment on the JSE really was is contested. Anglo American, for instance, offloaded Johannesburg Consolidated Investments (JCI), which originated as one of the old mining-finance houses, to a BEE investor group in 1995, when a high share price could be obtained. Three years later share prices had plummeted as consequence of the East Asia crisis, and Anglo American bought back two of the more lucrative gold mines from Johannic, controlled by the BEE holding company New African Investment Limited (Carmody, 2002). The share of JSE-capitalisation controlled by black investor groups never rose above 10% (peaking in 1998 at 9.6%) and has dropped to 3.9% in 2012 (Rossouw et al., 2002, Ashman et al., 2013). BEE has been heavily criticised for favouring few well-connected black (and mostly male) entrepreneurs. A broad-based black economic empowerment policy was enacted in 2003, aiming beyond ownership at increasing employment, skills and community development to benefit a large number of previously disadvantaged South Africans (Iheduru, 2008).

[12] The difference in these estimates derives from equity price fluctuations. In April 1998, shares of Johnnic (controlled by the BEE group New African Investment Limited) were traded at ca. R70. A few months later the share price crashed to R21 (Bond, 2005).
[13] So did South African Breweries, the first industrial company to list on the JSE.

Table 3.2. The big five company groups: Comparing 1980s and 2014 ownership structure

	Established	Short history	Mining	Industrial	Finance	South Africa	International
			1988				2014
Anglo American	Established in South Africa in **1917** by Ernest Oppenheimer, listed on the JSE the same year with substantial backing from US investors.	Dominant mining finance house since 1920s. Diversified investment since 1960s, owning up to 60% of JSE-listed companies by late 1980s. Unbundled in late 1990s: In 1999 Anglo American Corporation of South Africa and Minerco Societe Anonyme merged. Primary listing was moved to London (LSE), secondary listings on the JSE, Swiss SWX and FSTE 100 and on Botswana and Namibian Stock Exchanges since 2001.	Anglo Gold, Anglo Coal, De Beers, JCI	AMIC, AECI, Premier Group	First National Bank, First Western, First Industrial, First Corporate Bank, Southern Life	Anglo American Platinum Limited, Anglo Coal, De Beers (1926), Kumba Iron Ore,	**Australia**: Anglo American Metallurgical Coal Holdings Limited **Brazil**: Anglo American Fosfatos Brasil Limitada, Anglo American Minério de Ferro Brasil SA, Anglo American Nióbio Brasil Limitada, Anglo American Níquel Brasil Limitada, Anglo Ferrous Brazil SA, Chile: Anglo American Norte SA, Anglo American Sur SA **Associates (<50%):** in Anguilla, Australia and Colombia
Rembrandt	Established in South Africa in **1948**, listed on the JSE in 1956. Rembrandt was restructured in 2000 and renamed to Remgro, listed on the JSE in September 2000.	Initially dealing with tobacco & cigarettes. Diversified in 1970s. In 1988 local & overseas interests separated by founding Compagnie Financiere Richemont AG (Swiss-listed). In 1995 Richemont & group consolidate interests in tobacco (Rothmans International), which merged with British American Tobacco (BAT) held by group and Richemont. In 2000, restructuring: split into Remgro & VenFin. VenFin retained communication/technology investments. BAT was unbundled in 2008.	Remgro, Gold Fields South Africa		Volkskas, Boland Bank, Volkskas Merchant Bank, Rand Merchant Bank, Allid United Building Society, Lifegro, Federated Life	VenFin **Associates (<50%):** Grinrod Limited, PGSI Limited, RMB Holdings Limited, RMI Holdings Limited, Medi-Clinic International	**UK:** Remgro Continental Limited (Jersey), Remgro USA Limited (Jersey), IPI (Overseas) Limited - Jersey, IPROP Holdings Limited - British Virgin Islands, VenFin Holdings Limited (Jersey)
SANLAM	Estbalished in South Africa in **1918** with the aim to promote Afrikaner economic interest.	Established with aim to increase Afrikaner participation in commerce & industry. In 1940, SANLAM founded Federale Volksbeleggings (Federal People's Investments) & in 1945 Bonuscor, both finance houses, with aim to support Afrikaner business interest. Together, the three took over mining interests in 1953 to establish the first Afrikaner mining finance house, Federale Mynbou.	Gencor	Malbak, Murray and Roberts, Fedvolks, Fedfoods, Semtrachem	Trust Bank, Santambank, Senbank, Sanlam	Sanlam, Sanlam Life Insurance, Sanlam Share Incentive Trust, Genbel Securities	**Europe**: Sanlam Netherlands Holdings Bv **Asia:** Pacific & Orient, Shriram Capital, Shriram Financial Ventures (Chennai) PVT
SA Mutual/ Old Mutual	Established in **1845**. The origins of Nedbank can be traced back to the foundation of the Cape of Good Hope Bank, established in **1831**.	Old Mutual is one of the oldest and today also largest financial group in South Africa with global assets and operations. The group unbundled it non-financial interests during the 1990s. In 1999, the company relocated headquarters to London, demutualised and listed on the London Stock Exchange (LSE).	Rand Mines	Barlow Rand, CG Smith, Safren, Plate Glass, CGS Foods, Tiger Oates,	Nedbank, Nedfin, UAL Mutual Bank, Perm Building Society	NedBank Group, Old Mutual South Africa	**Africa**: Old Mutual Life Assurance Co (Namibia) Ltd (Namibia), Old Mutual Zimbabwe Limited **US:** Acadian Asset Management LLC (USA), Barrow, Hanley, Mewhinney & Strauss LLC (USA), Old Mutual (US) Holdings Inc (USA) **Europe & rest of the world**: 5 subsidiaries; **Nedbank** has another 8 subsidiaries in Africa and 3 in the UK.
Liberty Life/ Standard Bank	Established in **1862** as the first foreign bank present in South Africa.	The group's origins go back to the Standard Bank of British South Africa, which started operations in 1862. By 1926, it was one of the three big banks that dominated the Union of South Africa. Today Standard Bank is one of the 'big four' alongside ABSA, First National Bank and Nedbank. Liberty Life was founded in 1957. It was acquired by Standard Bank in 1999, when listed on the JSE.			Standard Bank, Standard Merchant Bank, Stannic, Liberty Life	Liberty Holdings, The Standard Bank of South Africa, Standard Insurance Limited, Standlib Limited	**Africa:** CfC Stanbic Holdings Limited (Kenya), SBN Holdings Limited (Namibia), Standard Bank Swaziland Ltd (Swaziland), Standard Lesotho Bank Ltd (Lesotho), CfC Stanbic Bank Limited (Kenya), Stanbic Bank Botswana Ltd (Botswana), Stanbic Bank Ghana Ltd (Ghana), Stanbic Bank Tanzania Limited (Tanzania), Stanbic Bank Zambia Ltd (Zambia), Stanbic Bank Uganda Ltd (Uganda), Stanbic IBTC Bank PLC (Nigeria), Stanbic IBTC Holdings PLC (Nigeria), Standard Bank (Mauritius) Limited (Mauritius), Standard Bank de Angola S.A. (Angola), Standard Bank Ltd (Malawi), Standard Bank Namibia Limited (Namibia), Standard Bank RDC S.A (D R Congo), Standard Bank s.a.r.l (Mozambique), Standard Bank Trust Co (Mauritius) Ltd, Stanbic Investment Management Services (EA) Limited, Standard Insurance Limited Swaziland, STANLIB Lesotho (Pty) Ltd, Stanbic Investment Management Services (Proprietary) Limited (Botswana), STANLIB (Swaziland) Proprietary Limited, STANLIB Namibia (Pty) Limited, Stanlib Namibia Unit Trust Management Company Limited **Europe:** 11 subsidiaries in UK, Jersey, Isle of Man, **Rest of the world:** Standard Merchant Bank (Asia) Ltd Singapore, Standard New York, Inc (USA); **Liberty Life** has another 16 subsidiaries across Africa.

3.3.3. Firm heterogeneity in South Africa

As a consequence of these historical developments the South African business landscape is very diverse and dominated by extremes. On the one end of the spectrum, large global multinationals have developed (such as Anglo American or BHP Billiton). On the other end, there are very small enterprises and survivalist economic activity. Towards the end of the 1990s, more than one quarter of South African jobs was either of a survivalist nature or in (often informal) companies employing not more than ten people (Berry et al., 2002).

In South Africa, small non-financial firms are classified into small, micro and medium enterprises (SMMEs). According to the South African National Small Business Act of 1996, micro enterprises employ five workers or less, very small companies between six and ten (or 20 depending on the branch of industry), small firms from ten (or 20) up to 50 workers, medium-sized corporations between 50 and 120 (or 200) workers, while everything above this number of workers is a large corporation. The World Bank's SME (small and medium enterprise) department uses a similar definition, according to which micro enterprises employ up to 10 people, small firms up to 50 and medium-sized companies up to 300 (Ayyagari, Beck & Demirgüç-Kunt, 2003). The difference in the upper-end cut-off of these two definitions shows, however, that size categories are somewhat arbitrary.

Micro enterprises in South Africa are typically regarded as survivalist. Survivalist activity by definition generates income below the poverty line and includes hawkers, vendors and subsistence farmers (Berry et al., 2002). Micro enterprises in South Africa are legally defined as operating below the national tax registration limit and employing not more than five workers (South African President's Office, 1996). Furthermore, the South African Department for Trade and Industry understands micro enterprises to be:

> 'very small businesses, often involving only the owner, some family member(s) and at the most one or two paid employees. They usually lack "formality" in terms of business licenses, value-added tax (VAT) registration, formal business premises, operating permits and accounting procedures. Most of them have a limited capital base and only rudimentary technical or business skills among their operators' (The Department of Trade and Industry, 1995, pp. 9-10)

As highlighted in this definition, size alone is not a good guide to distinguish between firm types; legal status, administrative and technical abilities held by firms are also distinct characteristics. Survivalist firms, for instance, are based on self-employment as a survival strategy for those members of an economy that cannot find other means of generating income (OECD, 2012). These activities hardly produce the necessary income to ensure the survival of the individual, who is involuntarily self-employed and would take on alternative employment (in the formal sector) if possible.

Estimates of the number of SMMEs present in South Africa vary strongly. For the year 2000, official data sources (such as Statistics South Africa and Ntsika, the government's enterprise promotion agency) put the number of informal enterprises in South Africa, that is survivalist and micro activity, at somewhere between 650,000 and more than 1.1 million units. Private sector estimates were much higher, ranging up to 2.3 million informal firms (Berry et al., 2002). The majority of this very small-scale activity is believed to take place in the service industry (Devey, Skinner, & Valodia, 2006).

By turnover, in 2002 the largest category among non-VAT registered businesses operated in the wholesale and retail trade, catering and accommodation sectors (Lehohla, 2002). The majority of non-registered business activity is undertaken by black women, mostly in a one-person enterprise, or with the help of one other 'employee' (often a family member), and is in the majority of cases (63%) operated from home (Lehohla, 2002a, Lehohla, 2002b). Thus, most of these unregistered, informal activities are likely to be survivalist or a supplement to other household income. As consequence, it is difficult to quantify the economic

activity, let alone the balance sheets, of these small firms and survivalist units. On the one hand, there is hardly any data available; on the other hand, the resources of these enterprises are often indistinguishable from the household (or households) they are supporting.

Hence, all these survivalist, very small and informal firms are effectively household-based firms. These non-financial firms have very limited assets and are unlikely to make up more than a small fraction of the financial transactions of non-financial business, when considering the entirety of these transactions for South Africa. Self-employed professionals such as architects and medical doctors would fall into this category, too. This latter group is probably more distinct in wealthier economies, and has only begun to emerge on a larger scale in South Africa relatively recently.

It is often lamented that a strong core of medium-sized companies is missing in South Africa. In comparison to other developing and emerging economies South Africa has a weak small and medium-sized enterprise sector (Berry et al., 2002). Market domination by large corporations limits the growth possibilities of small and medium-sized firms. In the 2005 South African Innovation Survey one third of all small and medium-sized companies questioned listed market dominance of a competitor as major obstacle to innovation (CeSTII, 2006).[1] Despite unbundling among large listed corporations since the 1990s, that is, despite the sale of non-core business subsidiaries by large diversified holding companies, concentration and monopoly profits appear to have remained high in South African industries (Aghion, Braun, & Fedderke, 2006). Monopolistic competition in many sectors is often blamed for hampering informal activity (despite high unemployment and poverty rates, see Neves, Aliber, Mogaladi, & Toit, 2009).

[1] The survey covered 313 non-financial companies in total, of which 217 were small and medium-sized.

Since informal businesses are mostly poor in assets, they are unlikely to have contributed much to the observed high – and potentially rising – liquidity preference among non-financial companies. Equally, the small and medium-sized company sector, while providing a large share of jobs in South Africa, appears to be squeezed by large companies' monopoly profits. In 1999, micro, very small and small enterprises were estimated to account for almost 30% of South African employment, while large companies provided around 45% of jobs. However, in terms of GDP large firms were believed to contribute more than 65% in 2000, with the three small business categories not even generating 20% (the difference is made up by medium-scale business) (Southall, 2004).

Thus, it is likely that large (and especially listed) corporations account for the bulk of the financial transactions by non-financial businesses. According to other estimates, JSE-listed corporations account for almost 60% of the country's GDP (Malherbe & Segal, 2001). Given their good access to financial markets and bank borrowing (see Barth, Li, Lu, & Yago, 2010), they are likely to drive trends in financial operations among non-financial businesses.

3.4. Summary and conclusion

This chapter has proposed an alternative balance sheet approach to analyse the financial dealings of South African non-financial firms. This approach goes beyond the mainstream focus on individual or aggregate net worth, which disregards the size of a balance sheet, netting out assets against liabilities. This thesis argues that true balance sheet analysis must include the assessment of the full set of financial statements of a company, that is balance sheet and cash flow statement. This also includes the notes to the financial statements, which contain essential information about companies' financial positions. For a full picture, the qualitative information available in companies' annual reports also has to be considered, if with some caution.

However, detailed annual report and financial statement analysis is extremely time consuming. Therefore, this chapter proposes a methodology to identify overcapitalised non-financial corporations using conventional financial ratios, namely using the cash ratio. Overcapitalised non-financial firms avail themselves of larger volumes of liquid assets than would be necessary for their productive operations.

The answer question (1), the precautionary and the speculative motives to hold cash and other liquid assets are the most popular motives among mainstream and heterodox economists. The interaction between these two motives theoretically informed the overcapitalisation ratio, developed by the author. It is suggested to use a simplified ratio for the initial screening of firms, namely a cash ratio of unity and more, to identify potentially overcapitalised firms. Subsequently, the overcapitalisation ratio is carefully constructed from the balance sheet of these companies, accounting for all (potentially) liquid assets, not just cash and cash equivalents.

In response to question (2) it has to be noted that the proposed methodology aims at listed corporations. This limitation is owed to the limited amount of data available for non-listed corporations, who do not publish financial information, while listed companies are legally obliged to. However, given the importance and size of the listed corporate sector in South Africa this focus is justified. Listed non-financial corporations are likely to account for a large share of liquid assets held among non-financial firms in the country, because very small and survivalist firms are typically cash strapped, while the small and medium-sized company sector is relatively small. Thus, when investigating the financial dealings of non-financial business in South Africa, the majority of these transactions are likely to be undertaken by listed companies.

Nonetheless, firm heterogeneity will be considered wherever possible in the following chapter, which analyses financial operations of South African non-

financial companies from the microeconomic level. Chapter 7 complements this analysis by providing a macroeconomic perspective. Contrasting between the findings in chapter 4 and chapter 7 will therefore allow for the inference of insights about the financial positions of small and medium-sized companies in South Africa. Question (3) will be explored in the following chapter.

Chapter IV Balance sheet analysis of JSE-listed non-financial firms

This chapter applies the alternative balance sheet analysis presented in the last chapter to non-financial firms listed in South Africa, namely on the Johannesburg Stock Exchange (JSE).[1] The three previously outlined questions will guide the analysis, addressing (1) the role of financial operations in non-financial companies, (2) the type of companies in the analytical focus and (3) explanations for a rising corporate liquidity preference.

The literature review (in chapter 2) has shown that question (1) is answered in favour of either a precautionary or a speculative motive to hold liquidity by non-financial firms. This chapter will implement the comprehensive balance sheet analysis discussed previously (see chapters 1 and 3) to assess the importance of these two motives, but also to allow for alternative hypothesis generation. Given the nature of available firm-level data for South Africa, question (2) has to be answered in favour of listed non-financial corporations, that is, large listed businesses. This limitation will be rectified somewhat in the macroeconomic analysis, where firm heterogeneity will be explicitly incorporated when examining changing patterns of companies' financing and investment behaviour.

A detailed exposition of the data and sources used will be presented first. Subsequently, evidence that there has been a tendency towards overcapitalisation among JSE-listed non-financial corporations, at least since the end of apartheid, will be discussed. For this purpose, sectoral data of listed firms are used. While some sectors – such as basic resource extraction – appear prone to high liquidity preferences in general, most others historically held

[1] Some of the findings presented below have been discussed by the author elsewhere in an abbreviated form, with an exclusive focus on the financial dealings of the mining industry (see Karwowski, 2015).

much smaller volumes of liquidity on their balance sheets. Nonetheless, the analysis will show that both industrial and mining sectors have experienced a pronounced rise in liquidity volumes in the New South Africa (at least among listed firms).

Reviewing the evidence on a firm-by-firm basis, this chapter will demonstrate that the precautionary motive is an important driver of liquidity preference, but also, more importantly, that overcapitalised firms have a strong speculative motive to hold on to liquid assets. As discussed in the previous chapter, financing mergers and acquisitions is an important (speculative) reason to hold liquidity. It is striking that simple precaution – rather than intentional speculation by a non-financial corporation – can turn a company into a rentier firm. By contrast, non-financial firms that might appear to have a speculative motive for their liquidity holdings, speculate in real assets rather than financial ones.

From an emerging market perspective, what comes out of this study is that non-financial businesses in these economies are likely to have (country-)specific reasons that are shaped by domestically dominant industries to hold on to liquidity: there is evidence that resource-extracting companies – and particularly firms engaged in resource exploration – have an especially strong desire to hold liquidity because of the inherently speculative character of their operations. Since many emerging markets possess large extractive industries, corporations exploiting domestic resources are likely to impact the amount of liquid assets present in emerging economies and how they are turned over.

Thus, increased mergers and acquisitions activity together with rising efforts of mining and mining exploration companies in South Africa provide important clues as to why the liquidity preference might have increased among South African non-financial listed corporations. On the one hand, the integration into the world economy after the end of apartheid appears to have sparked more mergers and acquisitions, with listed (holdings) companies choosing strategies

that allow for easy buying and selling of subsidiaries. On the other hand, the local and global mining industry underwent important changes during the 1990s[2], stimulating exploration activity, which due to its inherently speculative nature requires large volumes of initial liquidity. These two trends are not always easily distinguishable. Therefore, the following sections review firm-level information in detail to establish the different influences, be they domestic developments and policy decisions or global trends, on JSE-listed companies' desire to hold liquid assets.

4.1. Data and methodology

The analysis in this chapter is based on firm-level data taken from INET BFA, formerly McGregor BFA[3], which is a private database offering South African and African financial and economic data (INET BFA, 2014). INET BFA is a commercial database mainly serving clients in the finance industry, that is, financial investors. These commercial clients are likely to focus on real-time and historical equity price data. This part of the INET BFA data service is most certainly highly lucrative and therefore likely to be better serviced. The historical balance sheet data required for this thesis appeared to be less well maintained. As consequence, the database was extremely unreliable when online downloads of large datasets were undertaken.

This might have been a side effect of the distance between the data provider (in Cape Town) and the author (using facilities in London), as sometimes claimed, when consulting with INET BFA representatives. More likely, however, a university subscription generates a much smaller cash flow than corporate clients do, resulting in better technical and personal support for those clients in comparison to university researchers. Hence, while the balance sheet data used in this thesis was extracted from the database, this proved to be difficult since

[2] See Bridge, 2010 on the changing global picture.

[3] McGregor BFA can be traced back to the Bureau for Financial Analysis, founded at the University of Pretoria in 1965. In 2014 McGregor BFA purchased I-Net Bridge, established in 1990, together forming INET BFA (2014).

the source is not set up to provide balance sheet figures on a large scale. In consequence, it was extremely time consuming, entailing many failed attempts because of technical and connectivity problems.

Furthermore, INET BFA does not provide meta information on data gathering and cleaning. Balance sheets are standardised when entered into the database. The author frequently enquired about standardisation rules, but was not provided with satisfactory information. Similarly, it is not entirely[4] clear whether sectoral balance sheets provided by INET BFA are consolidated in such a way to avoid double counting of assets (which can occur when company groups and individual member firms are both listed on the JSE).

Thus, the author decided to use all data provided by INET BFA with extreme caution and focus the empirical analysis on official balance sheet data published by the listed companies. This approach has the advantage to provide more quantitative and qualitative depth. The balance sheet and the cash flow statement are parts of each listed corporation's annual report. They are the centrepieces of the financial statement published in the annual report. Importantly, the financial information goes well beyond the line items provided on the balance sheet and in the cash statement.

The database contains detailed financial statement information for all the JSE-listed companies since 1990, and for major listed companies as far back as 1970. This includes all firms that have been delisted after 1990, and some corporations that were delisted before that time. Hence, the coverage is considered complete after 1990 and substantial for the years 1970 to 1990 (Roomaney, 2014). Due to this difference in data quality the chapter will distinguish between these two periods, and the focus of the analysis will be on

[4] In reply to a detailed enquiry concerning potential double counting in the INET BFA database, a firm representative claimed that double counting would not occur in the database (Roomaney, 2014). Given the commercial character of the database and the chosen formulation of the reply, the author was not convinced.

the New South Africa and data since 1994, which is compared to longer-term trends and older figures where necessary.

The data work for this chapter was carried out between January and September 2013 and covers data up until 2012. The data available for the period 1994 to 2012 is the full population of JSE-listed companies, rather than merely a sample. The documents and sources that were consulted cover the INET BFA database, which produces standardised firm-level and sectoral balance sheets as well as cash flow statements. Further, all available annual reports listed in the INET BFA online library were studied in conjuncture with the circulars and stock exchange news service (SENS) releases. INET BFA prides itself on having recorded all annual reports of JSE-listed corporations that have been released since 1990. Where available, additional documentation was consulted, either from the corporations' webpages, or from other investor information platforms, such as ShareData.

The INET BFA database provides data for 825 non-financial firms listed at the JSE between 1970 and 2012, and for 795 non-financial businesses for the years between 1994 and 2012. Non-financial corporations are categorised into nine different industrial sectors, namely: (1) basic materials, (2) consumer goods, (3) consumer services, (4) healthcare, (5) industrials, (6) oil & gas, (7) technology, (8) telecommunications and (9) utilities. Table 4.1. shows the number of non-financial firms contained in the dataset by sector. These firms have been listed at the JSE at least for one year during the periods 1970 to 2012 (column 2) and 1994 to 2012 (column 3), respectively.

Thus, there are five dominant non-financial industries represented on the South African stock exchange, namely, in order of size: industrials, basic materials, consumer services, consumer goods and technology. Healthcare, telecommunications, oil & gas and utilities are relatively small JSE-listed sectors, because the number of firms listed under these labels has not exceeded

21. Two firms could not be classified by sector and are therefore accounted for as 'unclassified'.[5]

Table 4.1. Number of JSE-listed non-financial firms by sector

Sector	Number of firms	
	1970-2012	1994-2012
Basic materials	194	187
Consumer goods	100	96
Consumer services	175	170
Healthcare	21	21
Industrials	241	229
Oil & gas	5	5
Technology	73	73
Telecommunications	10	10
Utilities	2	2
Unclassified	4	2
Total NFFs	825	795

Source: INET BFA, 2013.

Of course, finance also constitutes a sector to which JSE-listed companies can belong, taking the total number of sector classifications part of the South African capital market to ten. These sectors can be further divided into sub-groups, which are specified in Table A.1. in the Appendices at the end of the thesis. As of April 2013, there were 370 listed firms on the JSE, with a total market capitalisation of R7.8 trillion (ShareData, 2013), while South African gross domestic product (GDP) amounted to around R3 trillion in 2012 (National Treasury, 2013).

The methodology used here can be classified as a mixed method approach (Johnson, Onwuegbuzie, & Turner, 2007) since elements of qualitative and quantitative research are combined to obtain a better understanding of the corporate liquidity preference. This methodology has been chosen purposefully in the light of strongly varying findings about corporate liquidity holdings in

[5] Sector classifications are provided by the INET BFA database in accordance with JSE listings. The classification of delisted firms is not provided and has to be established from qualitative information – such as annual reports. This has been done by the author, using the INET BFA database in conjunction with ShareData (2013) and the firm's own webpage.

studies that focused only on quantitative (regression) analysis, as discussed in chapter 2 (see in particular Table 2.1.).

Therefore, descriptive statistics of balance sheet positions have been used to define volumes of liquidity among non-financial corporations on a sectoral level. Subsequently, firm-level data has been analysed to identify non-financial firms with particularly strong liquidity preferences. In order to understand their motivations and financial operations, quantitative information from the financial statements has been combined with qualitative research, resulting in 132 cases of JSE-listed non-financial businesses.

Wherever balance sheet positions were assessed, the consolidated group data were considered, rather than the positions for individual firms. This means that subsidiaries and associates were also taken into account. Subsidiaries are companies in which more than 50% of voting shares are controlled by the holding company, while businesses qualify as associates if between 20% and 50% of their stock is held by another company. This is important especially in assessing companies' control over liquid assets. The consolidated position proportionally reflects liquidity held by subsidiaries and also that of associates.

An in-depth summary of these firm profiles can be found in

Table 4.4. in part 4.4. below. They cover information about firms' activity, incorporation and stock exchange listings, as well as their current listing status and – if listed – JSE market capitalisation (as of April 2013). Furthermore, the case studies contain an assessment of companies' cash flow statements, identifying the main sources of cash flow. Firm profiles are discussed in more detailed in section 4.4. below, while an aggregate and a sectoral assessment of corporate liquidity holdings by JSE-listed companies is provided in sections 4.2. and 4.3., respectively.

4.2. Balance sheet analysis: The aggregate perspective

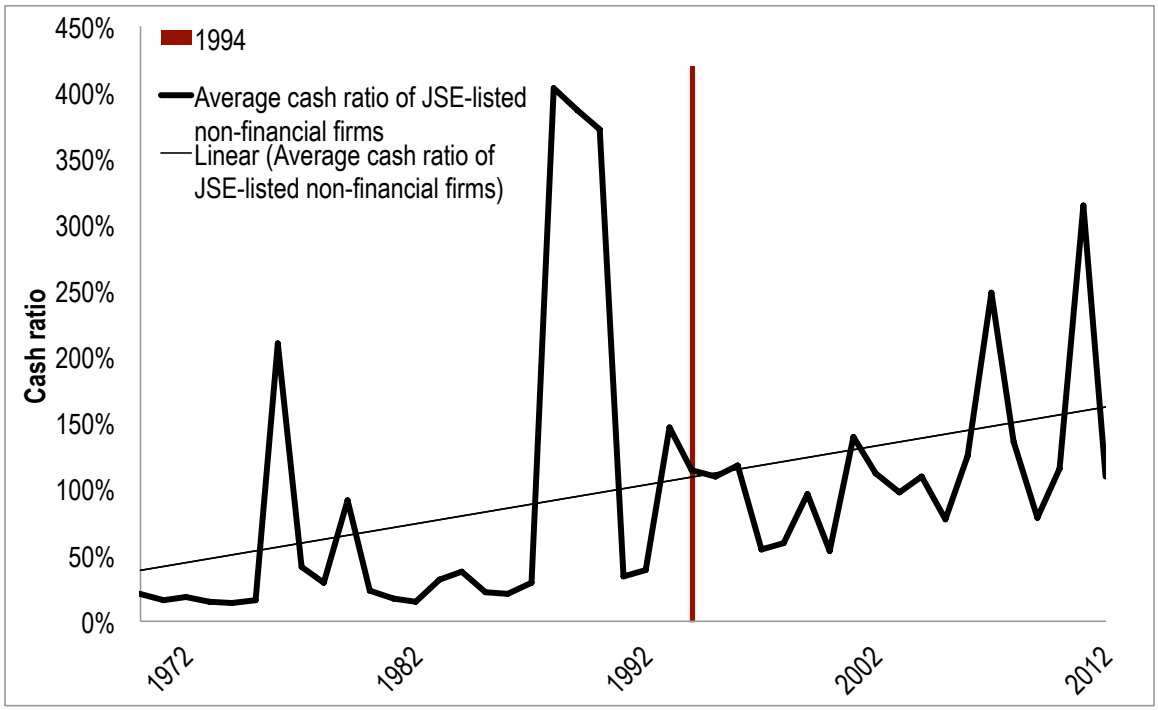
As discussed in chapter 3, it is problematic to assume homogeneity or coordination within the corporate sector of an economy – even if we exclusively deal with listed companies. Therefore, the following brief analysis is not meant to be an account of the macroeconomic level – which will be dealt with in detail in chapter 7 – but rather a first indicator of developments in corporate liquidity among non-financial firms listed in the South African capital market.

The two measures of corporate liquidity chosen for this research are the cash ratio and the overcapitalisation ratio (OCR). The reasons for this choice – as explained comprehensively in chapter 3 – are that the former ratio is easily obtained, while not strictly reflecting the entirety of a firm's liquidity, whereas the latter ratio reflects actual corporate liquidity more correctly, but is also more difficult to generate. A combination of these two is able to provide a more complete picture at the firm level. However, at the aggregate level we have to take recourse to the more easily obtainable indicator: the cash ratio.

Therefore, Figure 4.1. shows the unweighted average cash ratio, that is the ratio of cash and cash equivalents to total current liabilities, for all non-financial firms in the set of JSE-listed companies available from INET BFA. In the early 1970s the average cash ratio for JSE-listed non-financial corporations was around 15%. Since then, there has been a secular rise in the cash ratio with the average exceeding 100% by 2012. This means that by 2012 non-financial businesses listed on the JSE on average had enough cash and cash equivalents available to pay down their entire short-term debt, while retaining some of this liquidity. As stated above, data for before 1994 is less reliable than for the later years, because the coverage of firm data has been regarded as complete only since 1994. Despite large fluctuations in the aggregate cash ratio of JSE-listed firms a clear upward trend can be identified, especially since the mid-1990s, which is the time period for which data quality is more reliable. An upward trend can also be observed between 1994 – marked by the red vertical line in

Figure 4.1. – and 2012, with the average cash ratio increasing from around 85% in the late 1990s (that is 1995-1999) to more than 130% for the 2000s.

Figure 4.1. Unweighted average cash ratio of JSE-listed non-financial firms



Source: Author's calculations based on INET BFA, 2013.

The observed rise has neither been smooth nor gradual; rather the ratio has fluctuated violently, potentially also reflecting political unrest in apartheid South Africa and economic crises in the New South Africa. In 1976, non-financial corporations stocked up on cash, maybe in response to increasingly intense protest against the apartheid regime and its attempt – among other assaults on the non-white population – to impose Afrikaans as main language of education. This culminated in the Soweto Uprising on 16 June 1976 during which 20,000 students took to the streets and up to 700 were killed as result of police violence.

The precautionary motive might have prevailed amongst non-financial corporations, which chose to hold on to cash rather than invest during politically turbulent times. This was certainly exaggerated by the Blocked (or Dual) Rand system introduced in 1960 with the aim to strengthen South Africa's financial account position by controlling capital outflows. This made

withdrawal of capital from the domestic market difficult, trapping liquid funds on companies' domestic balance sheets. Likewise, the end of the 1980s saw high cash ratios among JSE-listed firms. This period was characterised by increasingly difficult access to international financial markets, due to high interest rates in major OECD countries, and high levels of debt owed by South African corporations and the government (Padayachee, 1991). It also heralded the end of apartheid as South Africa became internationally increasingly isolated due to its racist political system.

Financial liberalisation in the South African economy was triggered by the De Kock Commission of Inquiry into the Monetary System and Monetary Policy of South Africa established in 1978. The three reports produced by the commission set in motion a deregulation and liberalisation process similar to those observed in the US and UK economies. For instance, exchange controls on foreign residents were abolished by 1983. The Dual Rand system was fully abandoned by 1995 (SARB, 2015). Thus, since then assets from sales of foreign-owned assets in South Africa are freely transferable abroad. Some capital controls on domestic firms and residents remain in place until today. Nevertheless, the controls are unlikely to account for the extent of overcapitalisation and the strength of corporate liquidity preference present in South Africa.

On the one hand, capital account regulation has been progressively eased for the corporate sector over the past two decades. Since 2013 listed (and since 2014 also unlisted) companies can incorporate an entity to act as holding company for off-shore activities. This holding company is not subject to capital controls and the South African parent company can transfer up to R2 billion per year into the holding company. In fact, the parent company can apply to transfer up to 25% of its market capitalisation into this holding company, if this is deemed to be beneficial to South Africa (SARB, 2015).

On the other hand, whatever capital controls remained in place appear practically ineffective, as illegal capital flight from South Africa is estimated to

have averaged 12% of GDP between 2001 and 2007, peaking at 20% in the latter year (Ashman, Fine, & Newman, 2011). If capital controls had a decisive impact on firms' liquidity preference the aggregate cash ratio (portrayed in Figure 4.1.) should exhibit a secular decline over the 1990s and 2000s, when the financial account was gradually opened up in South Africa as part of a wider trend towards financial liberalisation.[6] Yet, what is observed is exactly the opposite trend.

In the New South Africa – since 1994 – sharp increases in average cash ratios among non-financial businesses appear to mirror economic disturbances, such as the 1996, 1998 and 2001 currency crises (Knedlik, 2006), which were accompanied by rises in average cash holdings on corporate balance sheets among JSE-listed firms. The global financial crisis of 2007/08 coincided with a surge in average cash positions in 2007, most likely as a consequence of liquidity drying up in international financial markets.

The thesis will shed more light on the macroeconomic dynamics and consequences of the rising corporate liquidity preference in chapter 7. Meanwhile, this chapter, dealing with corporate liquidity preference from a firm-level perspective, will attempt to disaggregate the rising trend in cash holdings among JSE-listed non-financial corporations, accounting for sector and firm specificities. Therefore, the next section presents a sectoral assessment of the corporate liquidity preference.

4.3. Balance sheet analysis: The sectoral level

Acknowledging differences among industries and the influence of industry-specific factors on holdings of liquidity, average cash ratios have been

[6] Today, capital controls on individuals and companies resident in South Africa are relatively limited. Since 2003, companies can invest up to R1 billion per year without any restriction, doubling the previous threshold (SARB, 2015d). Sums exceeding that threshold have to be authorised. Given that large South African companies like Anglo American or Old Mutual (formerly: SA Mutual) moved their headquarters overseas without problems, capital controls are a policy tool strongly circumscribed in use and effectiveness.

calculated for the ten industries making up the classifications of JSE-listed firms (see Table 4.2.). The table also shows average cash ratios for selected sub-sectors in the basic materials and finance industries. Both industries are large, containing a number of sub-sectors characterised by varying liquidity preferences, which necessitated further disaggregation.

Table 4.2. Average cash ratios by sector and selected sub-sector

Sub-Sector	1970-1979	1980-1993	1994-1999	2000-2007	2008	2009-2012	1994-2012
Basic materials							
Forestry & Paper	11.0%	10.7%	21.2%	24.4%	14.2%	20.7%	22.1%
Industrial Metals	7.7%	22.9%	39.3%	41.8%	66.9%	36.9%	41.3%
Chemicals	15.7%	2.8%	11.0%	21.2%	9.1%	18.0%	16.7%
Mining							
Coal	13.0%	26.8%	51.3%	9.0%	0.8%	41.0%	28.7%
Diamond & Gemstones	n/a	34.8%	38.0%	99.1%	15.3%	16.3%	58.0%
General Mining	24.6%	72.7%	52.4%	22.0%	24.2%	43.5%	36.2%
Platinum & Precious Metals	12.2%	33.5%	34.5%	18.1%	23.9%	18.9%	23.8%
Gold	3.4%	4.3%	25.6%	24.7%	12.7%	43.3%	28.3%
Consumer Goods	3.9%	9.0%	19.0%	26.3%	19.5%	19.8%	22.3%
Consumer Services	8.3%	13.0%	27.1%	31.1%	25.9%	23.0%	27.9%
Finance							
Banks	n/a	10.5%	4.4%	7.2%	3.0%	3.2%	7.4%
Financial Services	30.0%	44.4%	18.6%	14.4%	9.2%	8.8%	27.7%
Insurance	0.1%	19.6%	77.1%	26.8%	10.5%	9.4%	38.2%
Investment Instruments	3.6%	59.3%	67.8%	96.2%	23.4%	29.2%	69.3%
Real Estate	17.0%	103.3%	97.6%	30.2%	13.9%	9.7%	46.3%
Healthcare	n/a	82.4%	3.9%	28.5%	19.7%	29.0%	20.4%
Industrials	10.1%	16.3%	20.8%	21.5%	323.1%	27.3%	32.7%
Oil & Gas	n/a	22.3%	51.5%	16.6%	13.1%	41.9%	28.3%
Technology	0.7%	8.9%	54.0%	45.1%	36.4%	34.3%	45.2%
Telecommunication	127.5%	37.7%	28.5%	17.5%	35.6%	32.2%	25.0%
Utilities	n/a	n/a	20.5%	69.3%	2.4%	18.8%	44.9%

For NFFs: Cash ratios of 50%-99% are marked in yellow.

For NFFs: Cash ratios of 100% and more are marked in red.

Source: INET BFA, 2013.

The periodisation used in the table is broadly based on socio-economic events, although it has to be acknowledged that some variability and a different period classification might be possible.[7] The apartheid government was increasingly criticised internationally during the 1960s and 1970s, but only came under severe political and economic pressure in the 1980s. The arms embargo by the UN Security Council against the apartheid regime did not become mandatory until 1977, that is, until after the Soweto Uprising in 1976. In 1985, the

[7] Some authors (Dollery, 2003) would argue that 1975 (or 1976) was a more appropriate year to start the periodisation, since political unrest and the country's economic decline started in the mid-1970s. On the other hand, according to other commentators 1970 is a landmark for the economy because the physical volume of gold output peaked in that year, heralding the long-term decline of the economy (Jones, 2002).

Commonwealth introduced the first limited economic sanctions against the country (The Commonwealth Secretariat, 1989). The following year the US Congress passed the Comprehensive Anti-Apartheid Act imposing sanctions and demanding the release of Nelson Mandela. Consequently, the 1970s and the decade before the end of apartheid (1980-1993) are treated as two distinct periods.

The post-apartheid years between 1994 and 1999 are characterised by the attempt to reconcile the country under Nelson Mandela's presidency. The global economic upswing of the early 2000s (2000-2007) followed, resulting in high GDP growth in South Africa.[8] The boom was brought to an end by the repercussions of the 2007/08 global financial crisis, exaggerating the slow-down in domestic growth. South Africa plunged into a severe recession by the end of 2008, which is treated as distinct event. The country then recovered to moderate growth levels, defining the latest period (2009-2012). At the time of data collection only sporadic firm-level data were available for 2013, explaining the cut-off point (namely 2012) for analysis.

Table 4.2. uses two thresholds to determine non-financial corporations' overcapitalisation, i.e. the situation in which non-financial firms' liquidity holdings exceed what would be necessary for productive operations, as explained in chapter 3. One threshold has been already identified in the preceding chapter, namely the absolute threshold for strong overcapitalisation:

(1) Companies with a cash ratio of 100% and more will be classified as strongly overcapitalised because they could pay off their entire short-term debt, while still retaining highly liquid assets on their balance sheets. Given the cost of borrowing and forgone productive investment opportunities, it does not seem likely that a non-financial corporation would hold more than the equivalent of its total current liabilities due to concern about its short-term liabilities. Therefore, anything beyond a

[8] Growth was 4.4% annually on average SARB (2013).

cash ratio of 100% might be induced by the speculative motive. Cash ratios above this threshold are highlighted in red in the above figure.

The second threshold is, as suggested in chapter 3, a relative threshold. For this purpose Table 4.2. also includes the finance industry and its sub-sectors.

(2) Firms with a cash ratio of 50% and up to 99% are considered overcapitalised. This second threshold is based on the sectoral analysis of the South African economy, presented in Table 4.2. For the years 1994 to 2012 JSE-listed financial companies with the largest holdings of cash and cash equivalents relative to current liabilities on average have cash ratios exceeding 50% in aggregate. The three financial sub-sectors with the highest liquidity preference have an (unweighted) average cash ratio of 51.3%. The three sub-sectors are insurance, real estate and investment instruments, covering companies that typically deal in equity, currencies and real estate. This second threshold is important because it marks the level at which the distinction between financial and non-financial companies begins to blur. According to economic theory (and the minds of policy makers), financial and non-financial businesses are fundamentally different. Hence, this threshold is used to identify non-financial firms as overcapitalised. Cash ratios between 50% and 99% are highlighted in yellow in the table above.

The final column in Table 4.2. provides average aggregate cash ratios for the period 1994 to 2012. These are the years for which comprehensive data are available from INET BFA and will therefore be the focus of this analysis. Abstracting from financial companies, only diamond and gemstone mining, a sub-sector of the mining industry, shows average aggregate cash ratios above the overcapitalisation threshold (of 50%) for the entire period. Notably, the technology industry comes close to the threshold, with an average aggregate cash ratio of 45.2%. Assessing individual periods, other resource extracting

sectors – such as coal, general mining and oil & gas – also stand out as overcapitalised (according to the 50% threshold).

Extremely high aggregate cash ratios in 2008 can be found for the industrial metals and industrials industries. Strong overcapitalisation was detected in the latter, where the aggregate cash ratio was way beyond the 100% threshold at 323% in 2008. Both cases seem to be a function of the 2007/08 financial crisis and an exception for these sectors, which otherwise consistently show cash ratios below both thresholds.

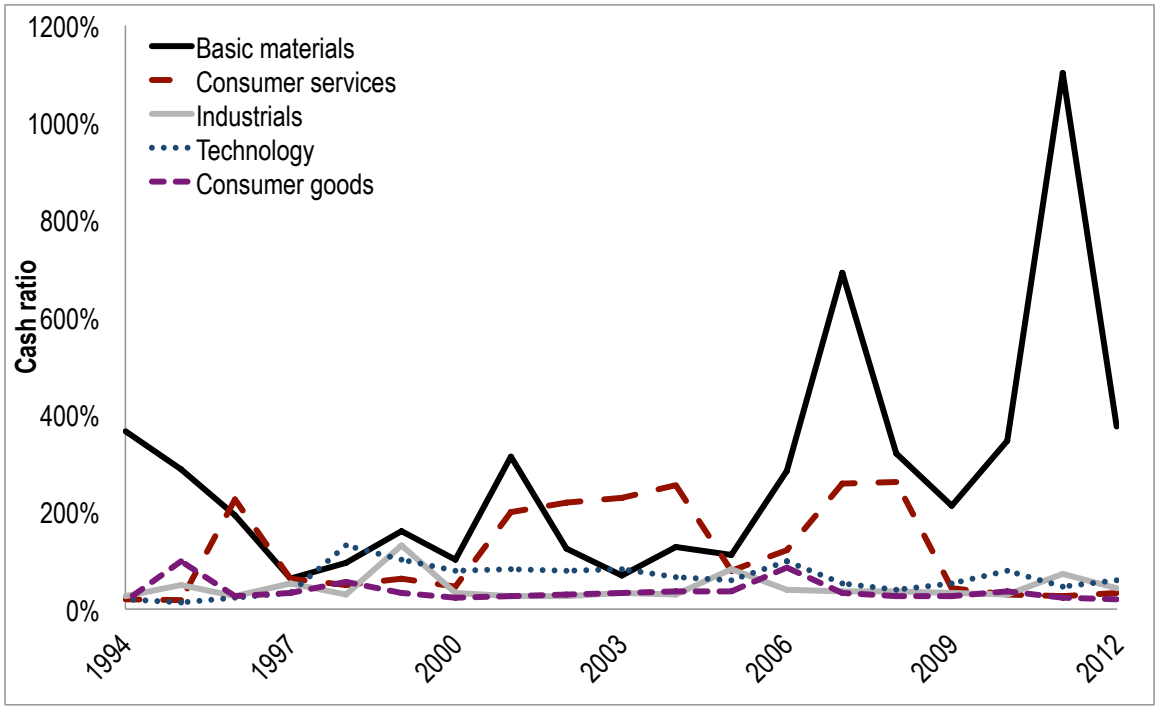
The healthcare, utilities and telecommunications industries also appear overcapitalised (according to the 50% threshold) on average for individual periods.[9] However, as documented in Table 4.1. above, a very small number of non-financial corporations is listed on the JSE in these three sectors. Therefore, it is generally more important how corporate liquidity preferences have developed in the five main industries that contain the bulk of JSE-listed non-financial companies. These are: industrials, basic materials, consumer services, consumer goods and technology.

Figure 4.2. shows the development of aggregate cash ratios in these industries for the period 1994 to 2012. It reveals that the basic materials sector has been a major driving force behind the overall increase in the corporate liquidity preference among JSE-listed non-financial corporations (as already documented in Figure 4.1. further above). Further, it is striking that the consumer services sector also has a persistently high – even though fluctuating – aggregate cash ratio. Holdings of highly liquid assets in the consumer goods and industrials industries have been more moderate and stable, as confirmed by the aggregate average (for 1994-2012) of 22% and 33%, respectively, provided in Table 4.1. above.

[9] Telecommunications in 1970-1979, healthcare in 1980-1993 and utilities in 2000-2007.

The technology sector is an interesting case, because the aggregate cash ratio here (close to 50%) has been relatively high over the entire period (1994-2012), but generally declining after its peak in the late 1990s. This peak is likely to reflect developments in the US stock markets in the run-up to the dot-com bubble, when listed technology companies could easily access liquidity in the capital market without driving down their share prices.

Figure 4.2. Aggregate cash ratios for selected sectors, 1994-2012



Source: Author's calculations based on INET BFA, 2013.

It is important to note that for all five of these industries the average cash ratio in the New South Africa (referring to 1994-2012) more than doubled in comparison to the last decade under the apartheid regime (1980-1993). Table 4.2. documents how the average aggregate cash ratio rose from 9% during the final years of apartheid (1980-1993) to more than 22% for the two subsequent decades (1994-2012) in the consumer goods industry, from 13% to almost 28% in consumer services, from 16% close to 33% in JSE-listed industrial companies and from 9% to more than 45% in the technology sector. Of course, these averages are only indicative, as data for the years prior to 1990 are not complete.

This development has been favoured by easing inflationary pressures during the 1990s, in comparison to the high-inflation environment governing South Africa in the late 1980s. Nevertheless, the relationship between liquidity preference and inflation is not straightforwardly inverse, since periods of high inflation in South Africa have coincided with increasing levels of corporate liquidity holdings among JSE-listed companies, such as in the early 1990s and then again in the early 2000s.

Table 4.3. Number of overcapitalised NFFs by sector, 1994-2012

Sector	Cash ratio of		Number of firms
	50%+	100%+	
Basic materials	41%	28%	187
Consumer goods	20%	5%	96
Consumer services	25%	11%	170
Healthcare	24%	14%	21
Industrials	19%	9%	229
Oil & gas	60%	40%	5
Technology	42%	21%	73
Telecommunications	30%	20%	10
Utilities	50%	0%	2
Unclassified	0%	0%	2
Total	28%	15%	795

Source: Author's calculations based on INET BFA, 2013.

Assessing the number of overcapitalised non-financial firms by sector confirms the observations from the calculation of average aggregate cash ratios: among the larger JSE-listed sectors there are two which stand out as industries with high numbers of overcapitalised non-financial corporations. As shown in Table 4.3. these are the basic materials and the technology sector. Some 40% of all oil & gas firms listed on the JSE have cash ratios that are on average above the 100% threshold, implying they are strongly overcapitalised. Even at the lower (50%) threshold 60% of all JSE-listed oil & gas companies come up as overcapitalised.

However, this observation is put into perspective when one considers the absolute number of oil & gas companies in the dataset. There are merely five

firms. Hence, the sector alone is unlikely to drive the larger phenomenon of rising liquidity preferences among JSE-listed companies. As is discussed in the following section, the oil & gas industry shares specific characteristics with mining of basic materials – namely the necessity for resource exploration – that induces firms in both sectors to amass liquidity.

Considering average cash ratios over the period 1994 to 2012, 28% of all basic materials firms were strongly overcapitalised, exhibiting cash ratios of 100% and more. This percentage is almost twice as high as the 15% of total JSE-listed non-financial companies, which on average were strongly overcapitalised during those years. Apart from the oil & gas sector, this is the industry with the highest incidence of strong overcapitalisation, followed by the technology sector where more than one fifth of all listed companies have cash ratios of 100% and more on average for the years 1994 to 2012.

Utilising the lower threshold of 50% – which indicates overcapitalisation rather than strong overcapitalisation – similar percentages of technology companies (42%) and basic materials firms (41%) listed on the JSE count as overcapitalised. Nevertheless, basic materials is a larger industry on the JSE – including 187 companies in comparison to 73 technology firms for the years 1994 to 2012 – which means that in absolute numbers there were more overcapitalised basic material producers on the South African stock exchange. Once again, the oil & gas sector has a higher share of overcapitalised firms (60%). The same is true for the aggregate of utility companies (50%). Nevertheless, the small number of companies listed in these sectors makes this fact less important in understanding the broader trend.

As explained in the previous chapter, the cash ratio cannot fully account for overcapitalisation and is therefore simply an indicator for detecting instances of overcapitalisation. It cannot be used to assess the full extent or origins of overcapitalisation. Therefore, a relatively crude measure such as the period average cash ratio is sufficient. It serves only to highlight the most extreme

cases. Extreme in the sense that non-financial firms are either consistently overcapitalised, or overcapitalised only for a few years, but at a very high level. Therefore, non-financial corporations that have a long listing history, with cash ratios that are above the overcapitalisation threshold only for a couple of years, will not be singled out as overcapitalised. By contrast, non-financial firms listed at the South African stock exchange for a short period of time, with instances of either repeated or extremely high overcapitalisation will attract attention, since their listing history is dominated by high cash ratios.

Having detected overcapitalised non-financial companies, a much more detailed analysis using the OCR, that is, the amount of all liquid assets as share of total current liabilities, is necessary to assess its actual extent. The reasons for overcapitalisation can best be established through in-depth company case studies. Therefore, the next section will introduce balance sheet analysis at the firm level. For this purpose all strongly overcapitalised non-financial corporations will be first identified and subsequently examined in detail. The first exercise will be undertaken quantitatively, using the cash ratio, whereas the second assessment relies on in-depth mixed-method research, evaluating both quantitative and qualitative data available mainly from corporate annual reports.

4.4. Balance sheet analysis: The firm level

Using the strong overcapitalisation threshold – represented by an average cash ratios of 100% or more – 119 strongly overcapitalised non-financial firms can be identified for the years from 1994 to 2012. As one should recall these are the years for which comprehensive data are available from INET BFA. Another 13 cases can be discerned for the longer period, covering 1970 to 2012. These are included to obtain a more complete picture of what drives corporate liquidity preferences in South Africa.

The higher threshold for strong overcapitalisation has been used to make the exercise manageable, while also giving it meaningful boundaries. This section

will present information obtained through the detailed study of 132 non-financial companies. If the lower threshold was used – that is average cash ratios of 50% and higher – 243 corporations would have to be analysed quantitatively and qualitatively, which would have been beyond the scope of what is feasible for a PhD thesis.

Nonetheless, it is important to remember that the phenomenon of overcapitalisation is not limited to the 132 cases presented here, and also not necessarily limited to the 243 cases identified by the lower threshold, since the cash ratio does not account for liquid assets with a maturity period of more than 3 months. Instead, the 100% threshold identifies the most noticeable cases of overcapitalisation. For April 2013, strongly overcapitalised non-financial companies accounted for 6.2% of total JSE-market capitalisation, with the percentage increasing to 11.3% for overcapitalised non-financial corporations. However, it should be kept in mind that the financial sector in its broad form (that is, as FIRE) accounts for a large portion of JSE market capitalisation, namely for between one fifth and one quarter.

While this section deals with firm-level analysis, the industry specific circumstances of these companies are of course kept in mind. As discussed in chapter 3, sound balance sheet analysis (i.e. what the author labels 'comprehensive balance sheet analysis') must pay attention to industry-specific factors that impact firms' operations. Thus, it will be shown that mining companies and especially exploration companies have strong reasons to hold large volumes of liquidity due to the inherently speculative nature of their activity. Table 4.4. provides detailed information for the 132 overcapitalised non-financial companies, summarising information about their activities, incorporation and any foreign stock exchange listings, as well as the current listing status and – if listed – market capitalisation in April 2013. Further, a comment section contains any additional information that is important to understand the companies' operations and business history.

Table 4.4. 132 cases of overcapitalised JSE-listed non-financial firms

Name	Company profile	
Chrometco Limited (Chrometco)	*Activity*	Copper, cobalt, manganese and iron ore exploration and mining.
	Incorporation/ listing	Incorporated in South Africa in October 2002, listed on the JSE AltX in August 2005.
	Cash flow sources	The company has been concentrating on mining exploration until 2011 when mining operations at Rooderand Chrome began. Main income sources have been financial income (since 2008 when interest rates on liquid assets were changed from 0% to a variable rate) and sales/management of mines.
	JSE market capitalisation (April 2013)	R41 million (rank 348 out of 370 listed companies).
World Educational Technologies	*Activity*	Investor and financial education, in 2000 transformed into a property trading business.
	Incorporation/ listing	Incorporated in South Africa in July 1998 as Africa's Best 39 Limited, renamed to World Educational Technologies in July 1998, listed on the JSE in September 1998.
	Cash flow sources	No income from operations. Listing in 1999 generated funds, further income from disposal of listed investments, subsidiaries and businesses.
	Comments	The company is a merger of seven companies - namely Stock Market Investors Club, World Equity Network, DataShare and Trade Triggers, Three C Systems, Manning Software, Alexander Frances Consultants and Stock Market Solutions - dealing with stock market education, investment research and IT development. The oldest of these companies were incorporated in the late 1980s.
	JSE market capitalisation (April 2013)	Delisted in November 2001 after disposal of all major assets and acquisition of property portfolio.
Barnato Exploration Ltd	*Activity*	Mining exploration.
	Incorporation/ listing	Incorporated in South Africa in 1988, listed on the JSE in 1988.
	Cash flow sources	Irregular income from operations, funded through loans from JCI.
	Comments	The company received administrative and technical support from JCI through a management contract. The contract went over to Western Area Limited as JCI restructured. Finally, the company was acquired by JCI to to enhance its mineral rights portfolio through the introduction of a BEE partner.
	JSE market capitalisation (April 2013)	Delisted in October 2003 after becoming a wholly-owned subsidiary of JCI.
United Services Technologies Ltd	*Activity*	Investment holding company with interest only in UT Worldwide Inc. which is a supply chain solutions provider.
	Incorporation/ listing	Incorporated in the British Virgin Islands in 1987.
	Cash flow sources	Dividends received from UT Worldwide Inc.
	Comments	The company generates income solely through its financial investments.
	JSE market capitalisation (April 2013)	Delisted in December 2004 after merger with Supply Solutions Limited.
Village Main Reef Limited (Village)	*Activity*	Until 1995: recovery of gold from sand dumps; 1995-2010: closure activities; Mines Limited activities are mining of gold, platinum and other minerals.
	Incorporation/ listing	Incorporated in South Africa in 1934, listed on the JSE in 1944.
	Cash flow sources	Until 1995: gold mining; 1995-2010: income from asset sales and limited interest on liquid assets; since 2010: mining operations.

Name	Company profile	
Randex Ltd	*Activity*	Gold and other mineral mining and exploration.
	Incorporation/ listing	Incorporated in South Africa.
	Cash flow sources	Mining operations, investment in other mining companies and lease of mining rights.
	Comments	Mature mining company; Genbel and subsequently Genbel Securities was the majority shareholder and also acts as administrator. After Randex converted major mineral rights into shareholdings and anticipating the sale of Randex's remaining mineral rights the company was converted into a wholly-owned subsidiary of Genbel Securities - a financial investment company - and delisted.
	JSE market capitalisation (April 2013)	Delisted in May 1997 after becoming a wholly-owned subsidiary of Genbel Securities.
Progress Industries	*Activity*	Clothing ad textile manufacturing.
	Incorporation/ listing	Incorporated in South Africa in 1945.
	Cash flow sources	Until 1994: operations, subsequently: interest-bearing investment.
	Comments	Between 1970 and 1994, the company had an average cash ratio of 1.4%. The high cash ratio in 1995 was the result of the liquidation of PK&T, the company's main subsidiary.
	JSE market capitalisation (April 2013)	JSE listing suspended in November 1994, delisted in September 1996.
Wooltru Limited	*Activity*	Investment holding company with interest in consumer goods as well as property owning, letting and development.
	Incorporation/ listing	Incorporated in South Africa and listed on the JSE in July 1936.
	Cash flow sources	Income from operations until early 2000s when the total unbundling was initiated and the company disposed of its profitable listed and unlisted investments, making losses on operations but profits through deinvesting.
	Comments	The company started unbundling in the late 1990s to increase the value of group assets, total unbundling and subsequent liquidation was decided in 2001. Litigation procedures around CNA, a part of the group, delayed the unbundling until 2009 when the acquisition of PBT Group was decided instead of liquidation.
	JSE market capitalisation (April 2013)	Delisted from the JSE in November 2010 after acquiring PBT Group and changing name to PBT Group.
Sasani Limited	*Activity*	Investment holding company with interest in the media sector.
	Incorporation/ listing	Formerly Crendell Investment Corporation, listed on the JSE in January 1997.
	Cash flow sources	Income from operations and finance by share issuance.
	Comments	In 1995, the company unbundled its investment in Saflife Ltd and Hosken Consolidated Investments, turning into a cash shell in 1996. In 1997, the company started acquiring media companies.
	JSE market capitalisation (April 2013)	Delisted in October 2005.
Witwatersrand Consolidated Gold Resources (Wits Gold)	*Activity*	Gold and uranium exploration.
	Incorporation/ listing	Incorporated in South Africa in December 2002, listed on the JSE in April 2006, secondary listing on the Toronto Stock Exchange in January 2008.
	Cash flow sources	Gold exploration but not mining itself, implying the main income sources are sales/management of mines.
	JSE market capitalisation (April 2013)	R338 million (rank 257 out of 370 listed companies).
Free State Development & Investment Corporation Ltd	*Activity*	Mineral mining and exploration.
	Incorporation/ listing	Incorporated in South Africa.
	Cash flow sources	Interest and dividends received.
	Comments	The company was acquired by Randgold & Exploration which was then integrated into JCI Limited to simplify the holding structure.
	JSE market capitalisation (April 2013)	Delisted in November 2003 after acquisition of Free State Development & Investment Corporation by Randgold & Exploration.

Name	Company profile	
Avgold Ltd	*Activity*	Gold mining, development and exploration.
	Incorporation/ listing	Incorporated in South Africa in November 1990 as Target Exploration Company Limited, listed on the JSE in December 1996, listed on the Brussels Stock Exchange.
	Cash flow sources	Income from operations, disposal of mining assets, financial investment and rights offers.
	Comments	The company was incorporated to reorganise the mining assets of Anglovaal, the company's controlling shareholder. These assets are Hartebeestfontein and Loraine mines, Target, Sun Oribi and ETCons.
	JSE market capitalisation (April 2013)	Delisted in May 2004 after the acquisition of Avgold by Harmony Gold Mining Company Limited.
Kiwara Plc (Kiwara)	*Activity*	Base metal exploration.
	Incorporation/ listing	Primary listing on the London Stock Exchange (AIM), secondary listing on the JSE in April 2008.
	Cash flow sources	No operating income, limited interest on liquid assets, financing through equity issuance.
	Comments	In 2009 Kiwara had difficulties raising capital. The International Financial Corporation of the World Bank Group agreed to purchase shares for cash worth 6 million US dollar (with an option on further 9 million US dollar).
	JSE market capitalisation (April 2013)	Delisted in February 2010 after acquisition of Kiwara by First New Quantum.
Sephaku Holdings Limited	*Activity*	(Industrial) mineral exploration, development and investment.
	Incorporation/ listing	Incorporated in South Africa as Zeranza in February 2005, renamed to Sephaku Holdings Limited in May 2005, listed on the JSE in August 2009.
	Cash flow sources	No operating income, financing initially through equity issuance and subsequently long-term debt.
	JSE market capitalisation (April 2013)	R1,306 million (rank 196 out of 370 listed companies).
Kibo Mining Plc	*Activity*	Gold and nickel exploration.
	Incorporation/ listing	Incorporated in Ireland in 2008. Primary listing at the London Stock Exchange (AIM) since 2010, secondary listing at the JSE in May 2011.
	Cash flow sources	No operating income, limited current liabilities, no non-current liabilities, financed through equity issuance.
	JSE market capitalisation (April 2013)	155 million Rand (ranked 296 out of 370 listed companies).
African Eagle Resources (AER)	*Activity*	Mineral exploration.
	Incorporation/ listing	Incorporated in the UK in 1996. Primary listing on the London Stock Exchange (AIM), secondary listing on the JSE (AltX) in August 2007.
	Cash flow sources	Acquisition and disposal of subsidiary companies/mines, no income from mining operations, financed through equity issuance.
	JSE market capitalisation (April 2013)	R187 million (ranked 284 out of 370 listed companies).
Coal of Africa Resources (Coal of Africa)	*Activity*	Coal exploration and mining.
	Incorporation/ listing	Incorporated in 1979 in Australia. Primary listing on the Australian Stock Exchange in 1980, secondary listings on the London Stock Exchange (AIM) in 2005 and on the JSE in November 2006.
	Cash flow sources	Since 2007 Coal of Africa has been making losses on operations financed through equity issuance, current and non-current liabilities. It has also been very active in acquisition and disposal of subsidiary firms.
	JSE market capitalisation (April 2013)	R1,898 million (ranked 174 out of 370 listed companies).
Mine Restoration Investments Ltd (MRI)	*Activity*	Water treatment technology.
	Incorporation/ listing	Established by a reverse take over of Western Utilities Corporation by Capricorn Investment Holdings (incorporated in 1987, listed on the JSE in January 1988) in April 2012.
	Cash flow sources	No operating income yet, income from dividends and interest.
	Comments	Capricorn Investment Holdings was listed as financial company on the JSE. At the point of reverse acquisition Capricorn was merely a cash shell, not possessing any business operations. The acquisition of Western Utilities Coporation was financed by equity issuance.
	JSE market capitalisation (April 2013)	R94 million (ranked 317 out of 370 listed companies).

Name	Company profile	
Simmer & Jack Mines Limited (Simmer & Jack)	*Activity*	Gold exploration and mining.
	Incorporation/ listing	Established in South Africa in 1887, listed on the JSE in 1924 and the LSE.
	Cash flow sources	No income from operations since early 1990s (except 2002-03, 2007-08), strong growth in investment expenditure since 2006, financed through equity and (mostly long-term) borrowing.
	Comments	Mining assets have been declining in volume and quality. Simmer & Jack have been exploring and acquiring mining assets.
	JSE market capitalisation (April 2013)	JSE listing suspended in December 2012, delisted in April 2013.
Oceana Investment Corporation Plc	*Activity*	Investment holding company with interest in consumer goods and services.
	Incorporation/ listing	Incorporated in the UK.
	Cash flow sources	N/A.
	Comments	N/A.
	JSE market capitalisation (April 2013)	Delisted in 1998 after acquisition of Oceana Investment Corporation by Park Lawn Limited.
Tawana Resources (Tawana)	*Activity*	Mineral and diamond exploration.
	Incorporation/ listing	Incorporated in Australian in November 1998, listed on the ASX in April 2001, secondary listing on the JSE in November 2005.
	Cash flow sources	No operating income, financing through equity issuance.
	Comments	The balance sheet had to be reduced in 2009 and operations reoriented towards exploration and more involvement of joint venture partners due to lacking capitalisation.
	JSE market capitalisation (April 2013)	R111 million (rank 308 out of 370 listed companies).
Southern Mining Corporation Ltd	*Activity*	Mineral exploration.
	Incorporation/ listing	Incorporated in South Africa in October 1996, listed on the JSE in October 1997.
	Cash flow sources	Some income from operations (2001, 2002), otherwise financed through share issuance and long-term borrowing.
	Comments	The company was set up with the purpose to explore and develop the Corridor Sands Project. Once this was achieved, the company was liquidated.
	JSE market capitalisation (April 2013)	Delisted in April 2004 after achieving its purpose of developing a specific mining asset.
Vogelstruisbult Metal Holdings Ltd	*Activity*	Until 1968: gold mining, subsequently: investment and share dealing company with interest in basic materials, mainly metal.
	Incorporation/ listing	Incorporated in South Africa in February 1933 as Vogelstruisbult Gold Mining Areas Ltd, renamed to Vogelstruisbult Metal Holdings Ltd in 1970, listed on the JSE, listed on the LSE.
	Cash flow sources	Gold mining operations ceased in October 1968, the company acquired additional investment in coal and base metal companies in 1970.
	JSE market capitalisation (April 2013)	Delisted in June 2000.
Afrocentric Investment Corp	*Activity*	Until 2004: fruit production and export, since 2005: diversified investment holding (electronics, communication industry, health care services)
	Incorporation/ listing	Incorporated in South Africa in February 1988 as WB Holdings Limited, listed on the JSE in 1988. Controlling ownership changed in 2005 when the company transformed into AfroCentric Investment Corporation.
	Cash flow sources	Until 2004: fruit production and export, since 2005: operational income from diversified investment and active use of financial operations (share issuance and borrowing).
	JSE market capitalisation (April 2013)	R1,487 million (rank 189 of 370 listed companies).
Halogen Holdings Societe Anonyme	*Activity*	Until 2007: gold mining in Zimbabwe, 2007-2009: operation of a chain of pubs through Heartstone Inns Limited.
	Incorporation/ listing	Incorporated in Luxembourg as Falcon Investments in 1992, listing on the JSE in 1993, also listed on the Luxemburg and Zimbabwe Stock Exchange, renamed to Falcon Investment Holdings Societe Anonyme in 2001, renamed to Halogen Investment Holdings Societe Anonyme in 2005.
	Cash flow sources	Gold mining, disposal of production assets and (once-off)mineral exploration project in Chile.
	Comments	Since 2000 gold mining was loss-making in Zimbabwe because of hyperinflation, government controls on foreign exchange and the overvaluation of the Zimbabwean dollar. As consequence, operations were closed down and assets sold to Central African Gold in 2007. The subsequent investment in a UK-based pub chain operator failed and the corporation was liquidated and delisted in 2009.
	JSE market capitalisation (April 2013)	Delisted from the JSE in September 2009.

Name	Company profile	
Ocean Diamond Mining Ltd	*Activity*	Diamond exploration and mining.
	Incorporation/ listing	Incorporated in the Island of Guernsey in 1983 as Ocean Diamond Mining Limited, all assets were transferred to Ocean Diamond Mining South Africa Limited in December August 1991, listed on the JSE in January 1992 and secondary listing on the Namibian Stock Exchange in January 1994.
	Cash flow sources	Income from operations.
	Comments	In 1997 the company diversified operations into Angola.
	JSE market capitalisation (April 2013)	Delisted June 2000 after a merger with Trans Hex Group Limited which made Ocean Diamond Mining a wholly-owned subsidiary of Trans Hex.
Gold One International	*Activity*	Gold exploration and mining.
	Incorporation/ listing	Emerged when BMA Gold (incorporated in August 2000 in Australia) acquired Aflease Gold (South Africa), listed on the ASX in March 2009, secondary listing at the JSE since February 2010 (March 2009 - January 2010: primary JSE listing).
	Cash flow sources	No income from operations (except 2010-11), high investment expenditure, financed through equity and borrowing.
	Comments	The company emerged as combination of several ailing mining companies, namely the South African Sub-Nigel Gold Mining Company (listed on the JSE in 1960) which acquired East Rand gold assets of Uranium One Africa in 2006, forming Aflease Gold Ltd. in 2009 Aflease was acquired by the Australian BMA Gold.
	JSE market capitalisation (April 2013)	R3,003 million (rank 148 out of 370 listed companies).
ZCI Limited	*Activity*	Holding company of a copper producing and mineral exploration and development group of companies.
	Incorporation/ listing	Incorporated in Bermuda in November 1969 as Zambia Copper Investments. The company was renamed to ZCI in May 2010,
	Cash flow sources	Loss-making operations since late 1990s with few exceptions (2002, 2004) financed through disposal of investment in subsidiaries.
	Comments	The company disposed of all its copper mining assets in Zambia in 2009, becoming a cash shell. Subsequently, the company acquired ACU, a public limited company incorporated in England and listed at the LSE (AIM) and Botswana Stock Exchange. ACU explores and develops copper deposits in Botswana.
	JSE market capitalisation (April 2013)	R301 million (rank 259 of 370 listed companies).
VenFin Limited	*Activity*	Investment holding company with interest in technology and telecommunications and some investment in financial services.
	Incorporation/ listing	Came out of the Rembrandt Group when the latter was restructured in September 2000, listed on the JSE in September 2000.
	Cash flow sources	Operations.
	Comments	Rembrandt Group was mainly dealing with tobacco and cigarettes. During the 1970s the group diversifies. In 1988 local and overseas interest were separated through the founding of Compagnie Financiere Richemont AG (Swiss-listed). In 1995 Richemont and the group consolidate their respective interests in tobacco (Rothmans International), which merged with British American Tobacco held by the group and Richemont. In 2000, Rembrandt Group was restructured and split into Remgro and VenFin. VenFin retained Rembrandt's communication and technology investments. BAT was unbundled in 2008.
	JSE market capitalisation (April 2013)	Delisted in April 2006 after VenFin was acquired by Vodaphone Plc.
First Uranium Corporation	*Activity*	Development of uranium and gold mines in South Africa.
	Incorporation/ listing	Incorporated in Canada in September 2005, listed on the TSX in December 2006, secondary listing on the JSE in March 2007.
	Cash flow sources	No income from operations, high investment expenditure, financing through equity and holding company.
	Comments	First Uranium was set up to develop Simmer & Jack Mines' uranium resources, bringing in equity finance from the TSX. Simmer & Jack own 67.2% in First Uranium. Forecasts were too optimistic. The company had to be recapitalised in 2010. Following the reverse take-over of Simmer & Jack by Village Reef First Uranium's assets were sold to AngloGold Ashanti Limited and Gold One International in 2012.
	JSE market capitalisation (April 2013)	R41 million (rank 349 out of 370 listed companies).
DNA Supply Chain Investments	*Activity*	Logistics and supply chain services.
	Incorporation/ listing	Incorporated in 1987, acquired by Lenco Investment Holdings and listed on the JSE in November 2000.
	Cash flow sources	Income from operations until 2003 when Super Group acquired the company in a rescue bid.
	Comments	The company was actively acquiring subsidiaries before it suffered losses in trading and required a rescue bid.
	JSE market capitalisation (April 2013)	The JSE listing was suspended in October 2003, liquidated and delisted in November 2005.

Name	Company profile	
Stantronic Group Holdings Ltd	*Activity*	Holding company with interest in electrical and electronic businesses.
	Incorporation/ listing	Listed on the JSE in June 1997.
	Cash flow sources	Operations and equity issuance.
	Comments	Stantronic came out of Gentech, which was a subsidiary of Altron. Gentech became a cash shell in 1996, after selling off all its assets. Subsequently, it was restructured and renamed to Stantronic in 1997.
	JSE market capitalisation (April 2013)	Delisted in June 2001.
Maranda Mines Limited	*Activity*	Mining.
	Incorporation/ listing	N/A.
	Cash flow sources	N/A.
	Comments	Limited information available.
	JSE market capitalisation (April 2013)	Delisted.
Stocks Hotels & Resorts	*Activity*	Operation of high-end hotels and restaurants.
	Incorporation/ listing	Incorporated in South Africa in 1996, listed on the JSE in February 1997.
	Cash flow sources	Some income from operations, high investment expenditure, financed through equity and long-term borrowing.
	Comments	Limited information available.
	JSE market capitalisation (April 2013)	Delisted from the JSE in April 2007.
Rare Earth Extraction Company	*Activity*	Developing a rare earth plant.
	Incorporation/ listing	Incorporated in South Africa in 1989, listed on the JSE in 1994.
	Cash flow sources	No or modest income from operations, finance through equity and long-term debt.
	Comments	A protracted legal case was made between 1999 and 2002 to wind down operations due to non-profitability. The company struggled raising sufficient capital for the project, being also adversely affected by fluctuating prices for rare earth products.
	JSE market capitalisation (April 2013)	Delisted from the JSE in June 2007. As of 2011 the company operates as a subsidiary of Great Western Minerals Group.
Lydenburg Platinum	*Activity*	Investment holding company with interest in platinum mining and mining exploration.
	Incorporation/ listing	Listed on the JSE, London Stock Exchange and NASDAQ.
	Cash flow sources	Operations and trade in investments.
	Comments	The company ubundled in 1996. As result shareholders received shares in the following companies: Rustenburg Platinum Holdings, Potgietersrust Platinum. Lebowa Platinum Mines, Lydenburg Exploration, and Benguela Concessions.
	JSE market capitalisation (April 2013)	Delisted in June 1996 as result of Lydenburg Platinum's unbundling.
Benguela Concessions Ltd	*Activity*	Diamond exploration.
	Incorporation/ listing	Incorporated in South Africa in June 1988, listed on the JSE in 1989.
	Cash flow sources	No income from operations, financed through equity issuance.
	Comments	N/A.
	JSE market capitalisation (April 2013)	Delisted in April 2000 after acquisition of Benguela Concessions by Trans Hex.
Net1 Applied Technology Holdings Ltd	*Activity*	Investment holding company with interest in IT services.
	Incorporation/ listing	Incorporated in South Africa as Javelin Housing (Pty) Ltd in May 1997, renamed to Net1Applied Technology Limited in September 1997, listed on the JSE in December 1997.
	Cash flow sources	Operations.
	Comments	The holding company also owns financial services providers.
	JSE market capitalisation (April 2013)	Delisted in July 2004 after group restructuring. Relisting of Net1 Applied Technologies South Africa Limited on the JSE in June 2004.
Pacific Asia Investments International Ltd	*Activity*	Investment holding company with interest in consumer goods.
	Incorporation/ listing	DJI Clothing, renamed to Pacific Asia Investments in December 1996, when the Malaysian company Mycom took control of the holding company.
	Cash flow sources	Operations and loans from holding company.
	Comments	The company also owns a property portfolio.
	JSE market capitalisation (April 2013)	Delisted in August 2001.
Smacsoft Group Ltd	*Activity*	Software development.
	Incorporation/ listing	Incorporated in South Africa in July 1996 as Smacsoft (Pty) Limited, renamed to Smacsoft Group in February 1999, listed on the JSE in March 1999.
	Cash flow sources	Operations and equity issuance.
	Comments	The company also owns a property portfolio.
	JSE market capitalisation (April 2013)	Delisted in February 2001 after acquisition of Smacsoft Group by AFA Systems.

Name	Company profile	
TEAL Exploration & Mining Incorporated	*Activity*	Mineral exploration.
	Incorporation/ listing	Incorporated in Canada, listed on the TSX in November 2005, secondary listing on the JSE in April 2006.
	Cash flow sources	No operating income, financing through equity issuance and short-term borrowing.
	Comments	TEAL was set up to explore African Rainbow Mining's (ARM) Southern and Central African mining assets. ARM owns 65% of TEAL. The company ran into funding difficulties and was liquidated, while its assets were transferred to a joint venture between ARM and Companhia Vale do Rio Doce.
	JSE market capitalisation (April 2013)	Delisted from the TSX and JSE in March and April 2009, respectively.
National Sporting Index Ltd	*Activity*	Bookmaking operations.
	Incorporation/ listing	Incorporated in October 1998 as Moneyline 921 Ltd, renamed to National Sporting Index Ltd in March 1999, listed on the JSE in May 1999.
	Cash flow sources	Loss-making operations.
	Comments	Owns 50% of a property company.
	JSE market capitalisation (April 2013)	Delisted in June 2002.
DiamondCorp Plc	*Activity*	Diamond mining.
	Incorporation/ listing	Incorporated in the UK in March 2005, listed on the LSE AIM in February 2007, inward listing on the JSE in March 2008. Both are primary listings.
	Cash flow sources	No operating income, financing through equity issuance.
	Comments	Diamond production was hampered by limited access to finance due to difficult conditions in international financial markets and lack of economic viability of projects due to low diamond prices.
	JSE market capitalisation (April 2013)	R212 million (rank 275 of 370 listed companies).
Suncrush Ltd	*Activity*	Investment holding company with interest in consumer goods.
	Incorporation/ listing	
	Cash flow sources	Operations.
	Comments	Suncrush distributed its investment in South African Breweries and Amalgamated Beverage Industries Limited to its shareholders and wound up its operations.
	JSE market capitalisation (April 2013)	Delisted from the JSE in November 1998.
Intervid Ltd	*Activity*	IT services.
	Incorporation/ listing	Incorporated in South Africa as Industrial Park Security Specialists CC, renamed to Intervid Limited in July 1999, listed on the JSE in August 1999.
	Cash flow sources	Loss-making operations financed through equity issuance.
	Comments	
	JSE market capitalisation (April 2013)	Delisted in August 2004 after the acquisition of Intervid Ltd by VenFin.
OneLogix Group Limited	*Activity*	Supply chain management and logistics fulfilment services.
	Incorporation/ listing	Incorporated in South Africa in March 1998 as Lexshell 145 Investment Holdings (Pty) Ltd, converted into a public company in May 1998, listing on the JSE in May 1998 as Venmil, renamed to OneLogix Group Ltd in September 2000.
	Cash flow sources	Mainly income from operations, financial operations focus on borrowing with limited equity issuance.
	Comments	The business grew significantly through acquisitions of South African companies of which some where incorporated as far back as the 1980s (Vehicle Delivery Services Limited: 1988, RFB Logistics Limited: 1991), but also organically.
	JSE market capitalisation (April 2013)	R660 million (rank 231 of 370 listed companies).
Great Basin Gold Limited	*Activity*	Acquisition, exploration and development of mining property
	Incorporation/ listing	Incorporated in Canada in March 1986 as Sentinel Resources Ltd, primary listing on the TSX in September 2003, secondary listing on the NYSE MKT in July 2003, secondary listing on the JSE in October 2006.
	Cash flow sources	No income from operations between 2006 and 2010, high investment into equipment and mining assets financed through equity.
	Comments	The company operates mining projects in the US and Africa. In South Africa it fully owns the Burnstone gold mining project where operations were suspended in September 2012 due to the company's inability to continue funding the projects working capital. Cash flow breakeven could have been achieved in May 2013.
	JSE market capitalisation (April 2013)	Delisted from the NYSE MKT in February 2013, suspended JSE listing.
ValueCom Holdings Ltd	*Activity*	Investment holding company with interest in IT services.
	Incorporation/ listing	Incorporated in South Africa as Unitrade 286 (Pty) Ltd in April 1998, renamed to ValueCom Holdings Ltd in June 1998, listed on the JSE in July 1998.
	Cash flow sources	
	Comments	
	JSE market capitalisation (April 2013)	Delisted in June 2001 after voluntary liquidation.

Name	Company profile	
Atlatsa Resources Corporation	*Activity*	Acquisition, exploration and development of platinum group mineral mining property.
	Incorporation/ listing	Incorporated in Canada in April 1983 as Anooraq Resources Corporation in May 2012, since the reverse take-over in 2004 of the BEE entity Pelawan Investments, the latter has been the Statutory Shareholder (min. 52% ownership), renamed to Atlatsa Resources Corporation in May 2012, primary listing at the TSXV, secondary listings at the NYSE MKT and at the JSE in December 2006.
	Cash flow sources	No income from operations, high investment into equipment financed through borrowing (also from Anglo Platinum).
	Comments	The operational focus shifted from Mexico to South Africa in 1999. A joint-venture with Anglo Platinum (in which Atlatsa is the controlling partner) over Lebowa Platinum Mines has been entered in 2009.
	JSE market capitalisation (April 2013)	R444 million (rank 246 out of 370 listed companies).
FASIC Ltd	*Activity*	Consumer goods production.
	Incorporation/ listing	Incorporated in South Africa in 1905 as The Lion Match Company, listed on the JSE in 1926, renamed to FASIC Ltd in July 1999 after restructuring.
	Cash flow sources	Operations.
	Comments	In 1999, the major FASIC became the major shareholder of the company which was formerly known as The Lion Match Company by purchasing 70.1% of interest in the company from South African Breweries who assumed control in 1987.
	JSE market capitalisation (April 2013)	Delisted in January 2001 after the acquisition of FASIC by FAL.
Central Rand Gold Limited	*Activity*	Gold exploration companies in South Africa with the intention of gold production.
	Incorporation/ listing	Incorporated in South Africa in June 2007 as result of the restructuring of the Rand Quest Syndicate Group, which was established in 2003 as unlisted Australian public company, primary listing at the LSE in November 2007, secondary listing at the JSE in November 2007.
	Cash flow sources	No income from operations, high investment into equipment finance through equity.
	Comments	Loss-making operations, albeit decreasingly so, financed through equity and sale of equipment in recent years.
	JSE market capitalisation (April 2013)	R112 million (rank 307 of 370 listed companies).
Lonrho Plc	*Activity*	Hotels, infrastructure, natural resources, support services, transportation.
	Incorporation/ listing	Company activity can be traced back to the London and Rhodesian Mining Company starting operations in 1909. Lonrho Africa Plc came into existence in 1998 through a demerger from the original companies' mining operations which were transformed into Lonmin. The company changed its name into Lonrho Plc in May 2007. Primary listing at the LSE and secondary listing at the JSE, both in May 1998.
	Cash flow sources	While operations were profitable during the 1990s they have been making losses since 2008. Losses and investment were financed through equity and borrowing.
	Comments	After the demerger in 1998 the company pursued a strategy of downsizing African operations, which has been changed in 2005 to rebuilding the company's brand and reputation in Africa.
	JSE market capitalisation (April 2013)	R1,192 million (rank 200 of 370 listed companies), delisted from the JSE in July 2013 after the company was acquired by FS Africa Limited.
Capricorn Investment Holdings Ltd	*Activity*	Until 2011: manufacturing of electromagnets, rewinding of motors and wholesale of electrical and related equipment, after: financial services.
	Incorporation/ listing	Incorporated in South Africa in October 1987 as Cenmag Holdings Limited, JSE listing in February 1988, renamed to Capricorn Investment Holdings in January 2011, renamed to MRI Limited in June 2012.
	Cash flow sources	Operations, limited financial operations focused on borrowing.
	Comments	The company has been a holding company with interest in wholesaling of electrical and related equipment, manufacture and servicing of electromagnets and motor rewinding since 1987. In 2010, the company became a cash shell after disposing of its assets due to declining profitability. It was renamed to Capricorn Investment Holdings in January 2011. After the acquisition of Western Utilities Corporation the company was renamed to MRI Limited in June 2012.
	JSE market capitalisation (April 2013)	Delisted from the JSE in January 2012.
Perskor Beleggings Beperk	*Activity*	Investment holding company with interest in consumer services.
	Incorporation/ listing	Incorporated in South Africa in August 1935, listed on the JSE.
	Cash flow sources	Operations.
	Comments	The company, which uses to be a publishing and printing company, became a cash shell after distributing listed investment in MIH Holdings and M-Cell Ltd in specie to its shareholders. The company was delisted due to non-compliance with JSE listing regulations and relisted as Portcullis Investment Holdings in 2000 after acquiring Deel-Smith & Co.
	JSE market capitalisation (April 2013)	Delisted in July 2000 after distributing the listed investment it held to shareholders, becoming a cash shell.

Name	Company profile	
Afgem Limited	*Activity*	Coloured gemstone exploration, mining, beneficiation and r
	Incorporation/ listing	Incorporated in South Africa in April 1998, listing at the
	Cash flow sources	No income from operations (with the exception of 2001, 2002) financed through equity.
	Comments	All tanzanite assets were sold to TanzaniteOne SA in 2004. The company acquired diamond assets from Canadian listed company Rex Diamond Corporation Limited. After operational problems all diamond mining assets were disposed of to MEEPO Investment
	JSE market capitalisation (April 2013)	Delisted from the JSE in August 2009.
NetActive Ltd	*Activity*	IT services.
	Incorporation/ listing	Dateline Forwarding Services PWV (Pty) Limited, renamed to NetActive Internet in December 1996, listed on the JSE in April 1999.
	Cash flow sources	Irregular income from operations, funded through equity issuance and sale of businesses.
	Comments	The company was restructured, disposing of its right to
	JSE market capitalisation (April 2013)	Limited.
MICROmega Holdings Limited	*Activity*	Until 1999: finance to unlisted companies likely to seek listing at the JSE, 2000-2003: financial intermediary, since 2004: support services, automotive component,
	Incorporation/ listing	Incorporated in South Africa in March 1998 as Legacy Ventures, JSE listing in August 1998, rename to Financial Insourcing Specialists Limited in 2000, renamed to
	Cash flow sources	Profitable operations since 2000.
	Comments	In 2004 the company decided to broaden investment changing its JSE listing from financials to support services. In 2010, the investment strategy was changed to focus on intellectual products rather than hard assets. The company has been disposing of automotive investment
	JSE market capitalisation (April 2013)	R252 million (rank 267 of 370 listed companies).
Griqualand Exploration & Finance Corporation Ltd	*Activity*	Asbestos exploration and mining.
	Incorporation/ listing	Incorporated in South Africa in 1970.
	Cash flow sources	Income from disposal of assets.
	Comments	disposal of assets as well as rehabilitation of mining areas followed. The company held 33% interest in Msauli Asbes
	JSE market capitalisation (April 2013)	Delisted in March 2002.
Fs Group Limited	*Activity*	N/A.
	Incorporation/ listing	N/A.
	Cash flow sources	N/A.
	Comments	N/A.
	JSE market capitalisation (April 2013)	Delisted.
DTH Dynamic Technology Holdings	*Activity*	Software and services business providing tailor-made software solution.
	Incorporation/ listing	Incorporated in South Africa in June 2004 as Dingekile Investments (Pty) Limited, renamed to Dynamic Visual Technologies Holdings (Pty) Limited in April 2005, converted into a public company in July 2007, renamed to DTH Dynamic Technologies Holdings Limited in October 2008, listing at the JSE (AltX) in November 2007.
	Cash flow sources	Profits from operations, initially (2007) a large shareholders' loan was granted but paid back shortly, using funds from equity issuance.
	Comments	The overcapitalisation of the company seems to be a result of the issuance of equity since raised funds were kept on the balance sheet as cash.
	JSE market capitalisation (April 2013)	Delisted from the JSE in September 2010 after the acquisition of DTH by Xantha Properties.

Name	Company profile	
Platmin Limited	*Activity*	Mineral exploration, development and production.
	Incorporation/ listing	Incorporated in Canada in 2003, primary listing on the TSX in August 2006, listing on AIM in August 2006, secondary listing on the JSE in July 2009.
	Cash flow sources	No income from operations, strong capital investment expenditure financed through equity.
	Comments	The company delisted from the TSX and JSE voluntarily since management believed that the share price did not reflect the company's value.
	JSE market capitalisation (April 2013)	Voluntary delisting from the JSE and all other exchanges in December 2011.
Monex Ltd	*Activity*	Construction, real estate development and consumer services related to the leisure industry.
	Incorporation/ listing	Incorporated in South Africa as Ilco Homes Limited, renamed to Monex Limited in 1995, listed on the JSE.
	Cash flow sources	Irregular income from operations, funded through equity issuance.
	Comments	Owns property operations, share portfolio and casinos.
	JSE market capitalisation (April 2013)	Delisted in February 2002 after acquisition of Monex Ltd by BoE Bank.
Miranda Mineral Holdings Limited	*Activity*	2000-2005: financial services, since 2005: mineral exploration and mining. (Note: Overcapitalisation occurred after 2005.)
	Incorporation/ listing	Incorporated in South Africa in February 1998 as Financial Market Dealers (Pty) Limited, changed into a public company in June 2000 and renamed to Proper Holding Limited, renamed to Proper Group Limited in October 2000, listing on the JSE in November 2000, reverse take-over of Miranda Mineral Holdings in December 2005.
	Cash flow sources	No income from operations, acquisition of mining assets financed through equity and shareholder loans.
	Comments	By its very nature Miranda Mineral's operating strategy does not generate cash flow from operations. Miranda Mineral does neither explore nor mine its asset actively but searches for a joint venture partner to do this, after acquiring the exploration and mining rights.
	JSE market capitalisation (April 2013)	R142 million (rank 302 of 370 listed companies).
Acumen Holdings Ltd	*Activity*	Training and outsourcing services.
	Incorporation/ listing	Incorporated in South Africa as Amberon Investments (Pty) Ltd in June 1996, renamed to Boston City Campus (Pty) in October 1996, renamed to Acument Holdings Ltd in April 1999, listed on the JSE in June 1999.
	Cash flow sources	Income from operations. High investment expenditure finance through long-term borrowing and equity issuance.
	Comments	The company disposed of all its operating assets and entered voluntary liquidation.
	JSE market capitalisation (April 2013)	Delisted in February 2001 after disposal of all Acumen assets to Adcorp.
Fralex Ltd	*Activity*	Investment holding company with interest in construction materials and mining services.
	Incorporation/ listing	Incorporated in South Africa, listed on the JSE.
	Cash flow sources	Dividends on investments and investment trade.
	Comments	Fralex held a single investment in Fraser Alexander Limited. Both companies were listed on the JSE. In 1999, Fralex unbundled and passed its interest in Fraser Alexander on to its shareholders, becoming a cash shell.
	JSE market capitalisation (April 2013)	Delisted in February 2001.

Name	Company profile	
Eland Platinum Holdings Limited	*Activity*	Platinum exploration and mining.
	Incorporation/ listing	Incorporated in South Africa in August 2005 as Nungu Trading 500 Limited, renamed to Eland Platinum Holdings Limited in October 2005, listing on the JSE in March 2006.
	Cash flow sources	No income from operations, strong capital investment expenditure financed through equity.
	Comments	The founding of Eland Platinum was prompted by Eland Mines' (formerly Tropical Trading 390 Pty Limited) acquisition of the Elandsfontein Platinum Project.
	JSE market capitalisation (April 2013)	Delisted from the JSE in November 2007 after Eland Platinum Holdings Limited was acquired by Xstrata South Africa (Pty) Limited.
Brandcorp Holdings Limited	*Activity*	Before 1997: supermarket franchise business, after: investment holding company whose subsidiaries are specialist distributors of branded consumer products.
	Incorporation/ listing	Incorporated in South Africa in March 1987 as Bloch Limited, after change of control in June 1997 renamed to Brandcorp Holdings Ltd in October 1997, listed on the JSE in 1992.
	Cash flow sources	Income from operations.
	Comments	In 1997 after disposing of all its trade marks and business operations the company became a cash shell.
	JSE market capitalisation (April 2013)	Delisted from the JSE in September 2007 after the acquisition of Brandcorp Holdings by Mainstreet 565.
West Rand Consolidated Mines Ltd	*Activity*	Gold exploration and mining.
	Incorporation/ listing	Incorporated in South Africa, listed on the JSE, the London Stock Exchange and the Paris Bourse.
	Cash flow sources	Trade in listed investment and businesses.
	Comments	Mining operations of the company go back to the 1880s, most assets were depleted or sold off by 1992. In 1994 management changed and new assets were acquired from First Westgold Mining Limited.
	JSE market capitalisation (April 2013)	Delisted in October 1999 after acquisition of West Rand Consolidated Mines Ltd by Harmony Gold Mining Company Limited.
New Africa Investments Limited	*Activity*	Investment holding company, until 2002: focusing on financial services, media, communications services and technology, since 2003: media and communication services.
	Incorporation/ listing	Incorporated in May 1993 as Metlife Investments Holdings Limited, renamed to New Africa Investments Limited in August 1994, listing on the JSE in August 1994.
	Cash flow sources	Profit-making operations financing strong investment expenditure with additional cash flow from equity and borrowing until 2003. Since 2004 loss-making operatings but profitable divestiture and settlement of outstanding debt.
	Comments	NAIL was one of the first major BEE-controlled investment holding companies. In 2004 it was acquired by the Tiso Consortium which initiated the disposal of all assets.
	JSE market capitalisation (April 2013)	Delisted from the JSE in January 2013 after the acquisition of New Africa Investments by Primedia (Pty) Limited.
Emergent Properties Limited	*Activity*	Manufacturing and marketing of knitwear.
	Incorporation/ listing	Operations began in 1952, listed on the JSE in 1969.
	Cash flow sources	Income from operations and use of long-term borrowing when operations were loss-making (1999, 2002-03).
	Comments	In 2006 the company disposed of all its knitwear business to concentrate on property investment, effectively becoming a cash shell. Since acquiring a property portfolio failed subsequently, the company remained a cash shell and had to be delisted.
	JSE market capitalisation (April 2013)	Delisted from the JSE in 2007 due to non-compliance with JSE listing requirements.

Name	Company profile	
Energy Africa Ltd	*Activity*	Oil and gas exploration.
	Incorporation/ listing	Incorporated in South Africa in July 1995 as Infront Sixty One Investments (Pty) Ltd, listed on the JSE and the Luxembourg Stock Exchange in March 1996.
	Cash flow sources	Mostly from operations, supplemented by long-term borrowing and equity issuance.
	Comments	Operations were loss-making (disregarding exploration costs written down) during most of the 1990s.
	JSE market capitalisation (April 2013)	Delisted in July 2004 after acquisition of Energy Africa Ltd by Tullow Oil plc.
Uranium One Inc	*Activity*	Uranium exploration and mining.
	Incorporation/ listing	Incorporated in Canada in January 1997 as Southern Cross, primary listing on the TSX in 1997, reverse take-over by Aflease Gold and Uranium Resources Limited in December 2005, renamed to SXR Uranium Once Inc, secondary listing on the JSE in December 2005.
	Cash flow sources	No income from operations, strong capital investment expenditure financed through equity and borrowing.
	Comments	The JSE listing was prompted by a reorientation towards South African assets which ceased to be the case when the main South African mine (Dominion Uranium) was put on care and maintenance in 2008. Uranium One Africa was sold subsequently. The JSE listing remained in place despite neither operations nor assets of the group in South Africa.
	JSE market capitalisation (April 2013)	R23,045 million (rank 55 of 370 listed companies).
Eastern Platinum Limited	*Activity*	Development and mining of platinum group metals.
	Incorporation/ listing	Incorporated in Canada in 2003, primary listing on the TSX, listing on AIM, secondary listing on the JSE in May 2007.
	Cash flow sources	Mostly profit-making operations, strong capital investment expenditure financed through cash flow, maturing short-term investment and equity.
	Comments	The company has substantial short-term investment unlike most other JSE-listed mining companies.
	JSE market capitalisation (April 2013)	R1,114 million (rank 206 of 370 listed companies).
Stilfontein Gold Mining Company Ltd	*Activity*	Gold mining and mine restoration activities.
	Incorporation/ listing	Incorporated in South Africa in 1949, listed on the JSE in 1949, listing on the LSE in September 1949, subsequent listings also on stock exchanges in Paris and Brussels.
	Cash flow sources	No income from operations, financed by disposal of mining assets and subsidiaries.
	Comments	The company operates a gold mine in the Klerksdorp area in South Africa. Underground mining operations ceased in 1992. Subsequently surface rock dumps were treated until this also became uneconomical in 1995. The company continued operating with a focus on disposal and rehabilitation of assets. Until 2005, the company had been carrying out pumping activity for Hartebeestfontein Gold Mining (a subsidiary of DRDGold Limited). When these operations were liquidated the company board requested the suspension of the JSE listing and liquidation.
	JSE market capitalisation (April 2013)	Delisted in April 2009 due to lacking compliance with JSE listing requirements. Earlier delisting and liquidation were opposed by the Department of Water and Forestry and Anglo American Ashanti who demanded the company to continue rehabilitation works.

Name	Company profile	
Super Group Limited	*Activity*	Supply chain management business, retail supply chain activities, automotive and fleet management.
	Incorporation/ listing	Incorporated in June 1943 in South Africa as Barnetts Group Limited, listed on the JSE in 1987, after disposing of all shares in subsidiaries 1994 the remaining cash shell acquired Basil Green Auto and was renamed to Motolink in 1995. After the merger with Super Group it was renamed to Super Group in September 1996.
	Cash flow sources	Income from operations, borrowing and active share issuance between 2005 and 2010.
	Comments	The group used to have highly diversified industrial interest including holdings in financial companies. There were disposed off during the 2000 when a strategic reorientation took place to refocus the business of supply chain services.
	JSE market capitalisation (April 2013)	R7,505 million (rank 108 of 370 listed companies).
Compu-Clearing Outsourcing Limited	*Activity*	IT services.
	Incorporation/ listing	Incorporated in South Africa in August 1998, listing on the JSE in November 1998.
	Cash flow sources	Profit-making operations, equity increasingly a source of finance since 2005.
	Comments	Cash is held for dividend payments, share buy backs and acquisitions.
	JSE market capitalisation (April 2013)	R151 million (rank 297 of 370 listed companies).
FrontRange Limited	*Activity*	IT services.
	Incorporation/ listing	Incorporated in South Africa in June 1997 as Ixchange Technology Holdings Limited, listing on the JSE in September 1997, renamed to Frontrange Limited in January 2002.
	Cash flow sources	Profit-making operations except for 2002 when losses were financed through an increase in minority interest.
	Comments	The majority of liquid assets is held in foreign currency which is explained by the company's strong focus on US operations.
	JSE market capitalisation (April 2013)	Delisted from the JSE in January 2006 after the acquisition of FrontRange Limited by Ferrari Holding Inc.
Ferrum Crescent Limited	*Activity*	Mineral exploration and development.
	Incorporation/ listing	Incorporated in Australia in 2001 as Witkop Mining Limited, renamed to Washington Resources Limited in November 2005, primary listing on the ASX in November 2005, reverse takeover of Ferrum Metals in December 2009, renamed to Ferrum Crescent Limited, secondary listing on AIM in December 2010, listing on the JSE in June 2011.
	Cash flow sources	No income from operations, strong investment activity financed by share issuance.
	Comments	The company disposed of all its Australian interests prior to November 2010 and refocused on its South African iron ore interests.
	JSE market capitalisation (April 2013)	R75 million (rank 327 of 370 listed companies).
Foneworx Holdings Limited	*Activity*	IT services.
	Incorporation/ listing	Incorporated in South Africa in 1995 as Bumperprops, which was a close company operating as a media placement agency, in July 1997 the close company was converted into a private company, VM Value Marketing (Pty) Limited, in March 1999 the company was converted to a public company and listed on the JSE in April 1999 as Interconnective Solutions Limited, renamed to Foneworx Holdings Limited in November 2006.
	Cash flow sources	Income from operations supplemented by substantial long-term borrowing during the late 1990s and infrequent (2008, 2013) but large share issuance.
	Comments	In the understanding of management excess funds are well managed since they are placed at favourable interest rates (Annual Report 2006).
	JSE market capitalisation (April 2013)	R265 million (rank 263 of 370 listed companies).

Name	Company profile	
Ucs Group Limited	*Activity*	IT investment holdings company.
	Incorporation/ listing	Incorporated in SA in 1978 as Universal Computer Services, listed on the JSE in September 1998.
	Cash flow sources	Income from operations supplemented by borrowing and share issuance.
	Comments	Cash and cash equivalents are held to generate income given high interest rates but also to provide a 'war chest' for business acquisitions (Annual Report 1998).
	JSE market capitalisation (April 2013)	After disposal of all assets in May 2011 the company was delisted in October 2011.
Mvelaphanda Resources Limited	*Activity*	Gold, uranium and platinum group metals mining.
	Incorporation/ listing	Listed on the JSE in 1932 as East Daggafontein Mines, renamed to Mvelaphanda Holdings after East Daggafontein Mines acquired all assets of Mvela Resources (incorporated in South Africa in 1980) in April 2002, merged with Rebserve in December 2004 to form Mvelaphanda Group Limited.
	Cash flow sources	Income from operations infrequently supplemented by borrowing and share issuance.
	Comments	Cash and cash equivalents are held for business acquisitions and as leverage to obtain credit for acquisitions (Annual Reports 2004, 2005).
	JSE market capitalisation (April 2013)	Delisted from the JSE in June 2011 after disposing of assets and declaration of a special dividend to all ordinary shareholders.
Paracon Holdings Limited	*Activity*	IT services.
	Incorporation/ listing	Incorporated in South Africa in 1994, listed on the JSE in April 1999.
	Cash flow sources	Income from operations infrequently supplemented by borrowing and share issuance.
	Comments	Cash and cash equivalents are held for business acquisitions (Annual Report 2000).
	JSE market capitalisation (April 2013)	Delisted from the JSE in December 2011 after the acquisition of Paracon Holdings by Adcorp.
Exxoteq Limited	*Activity*	Oil exploration.
	Incorporation/ listing	Incorporated in South Africa in April 2002 as Wild Rush Trading 12 Limited, listed on the JSE in November 2003.
	Cash flow sources	No income from operations financed through share issuance and some borrowing.
	Comments	Limited information available.
	JSE market capitalisation (April 2013)	JSE listing suspended in September 2004 due to irregularities in financial reporting, delisted in June 2007.
Thabex Limited	*Activity*	Mineral exploration and mining.
	Incorporation/ listing	Incorporated in South Africa in February 1988 as Nico Platinum Mines (Pty) Limited, renamed to Southern Platreef Mining Company (Pty) Limited in August 1989, listing on the JSE in May 1990, delisting from the JSE in May 1996, renamed to Thabex Exploration Limited in June 1996, listing on the JSE in November 1997 after restructuring.
	Cash flow sources	Mostly loss-making operations financed through disposals of businesses and share issuance.
	Comments	The company struggled to raise funds for mining exploration.
	JSE market capitalisation (April 2013)	Delisted from the JSE in July 2013 due to lacking compliance with JSE requirements.

Name	Company profile	
Servest Holdings Ltd	*Activity*	Low-tech business services.
	Incorporation/ listing	Incorporated in South Africa as Fluval (Pty) Ltd in February 1986, renamed to The Publishing Company Ltd in June 1986, listed on the JSE in November 1986, renamed to Publico Holdings Ltd, acquired entire capital of Servest (Pty) Ltd in August 1998, renamed to Servest Holdings Ltd.
	Cash flow sources	Operations, active equity issuance during late 1990s.
	Comments	In 1997, the company disposed of its investment in Kagiso Media Limited (formerly Publico Ltd), becoming a cash shell. After acquiring new business assets it was not overcapitalised.
	JSE market capitalisation (April 2013)	Delisted in September 2002 after acquisition of Servest Holdings by a consortium around AMB Partners.
M-Web Holdings Ltd	*Activity*	IT services.
	Incorporation/ listing	Incorporated in South Africa in March 1997 as Guid Hall No. 5 Investment Holding Company (Pty) Ltd, acquired by MIHH, renamed to Computer Configurations (Pty) Ltd in July 1997, renamed to M-Web Holdings in February 1998, listed on the JSE in March 1998.
	Cash flow sources	No income from operations, financed through equity issuance.
	Comments	Naspers was one of the major shareholders in M-Web. Since the funding situation for internet companies deteriorated during the early 2000s, it was decided that M-Web's listing on the JSE was terminated by Naspers buying out the remaining shareholders.
	JSE market capitalisation (April 2013)	Delisted in July 2001 after acquisition of M-Web Holdings by Naspers.
Western Areas Limited	*Activity*	Gold and uranium ore mining.
	Incorporation/ listing	Incorporated in South Africa in 1959, listed on the JSE in 1960.
	Cash flow sources	Income from operations supplemented by sales of businesses, equity investment and share issuance as well as option premiums.
	Comments	The company was incorporated after Johannesburg Consolidated Investment (JCI) Company Limited acquired prospecting rights over and a mining lease for assets in the Westonaria District in South Africa. JCI was the main shareholder and held a management contract with the company.
	JSE market capitalisation (April 2013)	Delisted from the JSE in March 2007 after acquisition of Western Areas Limited by Gold Fields Limited.
Amalgamated Electronic Corp Ltd	*Activity*	Security technology and services.
	Incorporation/ listing	Incorporated in South Africa in 1997 as Amalgamated Motor Holdings Limited, renamed to Convergent Network Limited in 1998, listed on the JSE in 1998, renamed to Tisec Limited in 1999 and subsequently moved to 'Financial Services', renamed to Amalgamated Economic Corporation in 2005 and moved to 'Electronic and Electrical Equipment'.
	Cash flow sources	Income from operations supplemented by borrowing and infrequent share issuance.
	Comments	The company is a subsidiary fully owned by Amalgamated Appliance Holdings Ltd which is listed at the JSE with a market capitalisation of R777 million. The holding company was very strongly overcapitalised between 2009-2013.
	JSE market capitalisation (April 2013)	R168 million (rank 287 of 370 listed companies).

Name	Company profile	
Aukland Health Ltd	*Activity*	Healthcare.
	Incorporation/ listing	Incorporated in South Africa in 1987 as Aukland Investments Limited, listed on the JSE, renamed to Aukland Health Limited in February 1998.
	Cash flow sources	Some income from operations, otherwise financed through share issuance and borrowing.
	Comments	The company possesses a property subsidiary, Aukland Real Estate (Pty) Ltd, with interest in hospitals and other property developments.
	JSE market capitalisation (April 2013)	Delisted from the JSE in September 1998 after becoming a wholly-owned subsidiary of Medi-Clinic.
Jubilee Platinum Plc	*Activity*	Mineral exploration and mining.
	Incorporation/ listing	Incorporated in England and Wales in 2002, listing on AIM of the LSE, listing on the JSE in November 2006.
	Cash flow sources	No income from operations, strong investment activity funded through share issuance.
	Comments	According to the prelisting statement of the company major mining companies have tended to scale down in-house exploration activities, funding or acquiring exploration companies. Therefore, the company's strategy is to achieve a favourable exit either through a sale of mining assets or through joint venture agreements with major mining companies.
	JSE market capitalisation (April 2013)	R416 million (rank 260 of 370 listed companies).
Royal Bafokeng Platinum Limited	*Activity*	Mining of platinum group metals.
	Incorporation/ listing	Incorporated in South Africa in July 2008, listing on the JSE in November 2010.
	Cash flow sources	Income from operations, strong investment activity makes additional financing (share issuance and borrowing) necessary.
	Comments	RBPlat was created from the restructuring of the Bafokeng Rasimone Platinum Mine (BRPM) Joint Venture between Royal Bafokeng Holdings and Anglo Platinum Limited. The restructuring resulted in the ownership and control of the mining operations of the joint venture vesting in the RBPM, via its subsidiary RBPlat.
	JSE market capitalisation (April 2013)	R8,431 million (rank 100 of 370 listed companies).
First Lifestyle Holdings Ltd	*Activity*	Investment holding company with interest in consumer goods.
	Incorporation/ listing	Incorporated in South Africa as First SA Food Holdings Ltd in 1996, listed on the JSE in June 1997, renamed to First Lifestyle Holdings Ltd in January 1999.
	Cash flow sources	Operations.
	Comments	The company's assets were sold off and voluntary liquidation was entered since the major shareholder, Leisureplanet, decided to deinvest refocusing on the IT sector.
	JSE market capitalisation (April 2013)	Delisted from the JSE in December 2000 after acquisition of First Lifestyle Holdings by Ethos Private Equity Limited.

Name	Company profile	
Remgro Limited	*Activity*	Diversified investment holding company.
	Incorporation/ listing	Going back to Rembrandt Group Limited, established in South Africa in 1948, listed on the JSE in 1956. Rembrandt was restructured in 2000 and renamed to Remgro, listed on the JSE in September 2000.
	Cash flow sources	Cash flow from operations, subsidiary trade and share issuance.
	Comments	Rembrandt Group was mainly dealing with tobacco and cigarettes. During the 1970s the group diversifies. In 1988 local and overseas interest were separated through the founding of Compagnie Financiere Richemont AG (Swiss-listed). In 1995 Richemont and the group consolidate their respective interests in tobacco (Rothmans International), which merged with British American Tobacco held by the group and Richemont. BAT was unbundled in 2008.
	JSE market capitalisation (April 2013)	R83,905 million (rank 20 of 370 listed companies).
Sab&T Ubuntu Holdings Limited	*Activity*	Business and consumer services.
	Incorporation/ listing	Going back to SAB&T Ubuntu which was incorporated in SA in 1994, the holdings company was incorporated in September 2006 as Abrina 4166 Limited, renamed to SAB&T Ubuntu Holdings Limited in October 2006, listed on the JSE in November 2006, acquired by SIMEKA in 2008, renamed to Morvest Business Group in 2010 after two BEE partners (BEECo and MANCo) acquired together 12.8% of the group's interest.
	Cash flow sources	Operations.
	Comments	The company is very strongly overcapitalised only in 2007 as result of share issuance.
	JSE market capitalisation (April 2013)	R122 million (rank 305 of 370 listed companies).
Darmag Limited	*Activity*	N/A.
	Incorporation/ listing	N/A.
	Cash flow sources	N/A.
	Comments	N/A.
	JSE market capitalisation (April 2013)	Delisted.
Corporate Africa Ltd	*Activity*	N/A.
	Incorporation/ listing	N/A.
	Cash flow sources	N/A.
	Comments	N/A.
	JSE market capitalisation (April 2013)	Delisted.
Silverbridge Holdings Limited	*Activity*	IT investment holding company.
	Incorporation/ listing	Going back to March 1993 when Prime Support (Pty) Limited was incorporated (central operating subsidiary of Synergy Group in 1999), Synergy Holdings Limited was incorporated in July 1995, listed on the JSE in April 1999, renamed to SilverBridge Holdings which was created by a reverse takeover of Synergy by SDT Financial Software Solutions (Pty) in November 2006.
	Cash flow sources	Income from operations, when operations were loss-making in 2000 share were issued and loans raised.
	Comments	In 2006, the company sold of its entire assets in 2005 effectively becoming a cash shell.
	JSE market capitalisation (April 2013)	R43 million (rank 347 of 370 listed companies).

Name	Company profile	
Johnnic Holdings Limited	*Activity*	Investment holding company in consumer services.
	Incorporation/ listing	Incorporated in South Africa in September 1889 as Johannesburg Consolidated Investment Company Ltd, restructured in 1995 into three companies: Johannic Industrial Corporation, AngloAmerican Platinum Corporation Limited and JCI Limited. Johannic Industrial Corporation Limited was listed on the JSE in January 1995, renamed to Johannies Industrial Corporation Ltd in May 1995, renamed to Johnnic Holdings Ltd in May 2000.
	Cash flow sources	Operations.
	Comments	The company actively invested in marketable equity and owned a property portfolio through Johannic Properties.
	JSE market capitalisation (April 2013)	Delisted from the JSE in September 2008 after acquisition of Johnnic Holdings Limited by Mercanto, a wholly-owned subsidiary of Hosken Consolidated Investments Limited.
African And Overseas Enterprises Ltd	*Activity*	Holding company with controlling interest in Rex Trueform Clothing Company.
	Incorporation/ listing	Incorporated in South Africa in 1945, listed on the JSE in 1960.
	Cash flow sources	Income from operations.
	Comments	The company holds 72.62% or ordinary and 51.94% of "N" ordinary shares of Rex Trueform Clothing Company. This means that their balance sheets are extremely similar.
	JSE market capitalisation (April 2013)	R185 million (rank 285 of 370 listed companies).
Gold Fields Namibia Ltd	*Activity*	Gold mining.
	Incorporation/ listing	Listed on the JSE and the Namibian Stock Exchange in May 1995.
	Cash flow sources	Operations.
	Comments	Gold Fields of South Africa Ltd, which is incorporated in South Africa, is the holding company through Wal Holding AG, incorporated in Switzerland.
	JSE market capitalisation (April 2013)	Delisted in July 1999.
Wetherlys Investment Holdings Ltd	*Activity*	Consumer services.
	Incorporation/ listing	Incorporated in South Africa in 1973, listed on the JSE in November 1997.
	Cash flow sources	Operations.
	Comments	Owns property investment operations.
	JSE market capitalisation (April 2013)	Delisted from the JSE in October 2003 after acquisition of Wetherly's Investment Holdings Ltd by Ellerine Holdings Limited.
Consolidated Mining Corporation Ltd	*Activity*	Investment holding company with passive interest in gold and other mineral mining and exploration.
	Incorporation/ listing	Incorporated in South Africa in November 1981 as Enyati Resources Limited, renamed to Johannesburg Mining and Finance Corporation in October 1987, renamed to Consolidated Mining Corporation Limited in December 1989.
	Cash flow sources	Operations.
	Comments	In February 1996, the company unbundled Egoli and South East Rand Gold. The unbundling took place in specie whereby shareholders received interest in subsidiaries of this company, which ceased to be part of Consolidated Mining Corporations Ltd. The remaining cash shells of subsidiaries were sold off and released funds were used for investment in mining companies.
	JSE market capitalisation (April 2013)	Delisted from the JSE in August 1997 after Consolidated Mining Corporation Ltd was acquired by N K Properties Limited.

Name	Company profile	
Rex Trueform Clothing Company Ltd	*Activity*	Apparel retailing and property.
	Incorporation/ listing	Incorporated in South Africa in 1937, listed on the JSE in 1945.
	Cash flow sources	Operations.
	Comments	African And Overseas Enterprises Ld holds 72.62% or ordinary and 51.94% of "N" ordinary shares of the company. This means that their balance sheets are extremely similar.
	JSE market capitalisation (April 2013)	R358 million (rank 254 of 370 listed companies).
Canadian Overseas Packaging Industries Ltd	*Activity*	Manufacturing.
	Incorporation/ listing	Incorporated in Canada in July 1961, primary listing on the JSE and secondary listing on the London Stock Exchange.
	Cash flow sources	Operations and trade in investments.
	Comments	N/A.
	JSE market capitalisation (April 2013)	Delisted from the JSE in December 2004 after minority shareholders disposed of their interest to the company.
Da Gama Textile Co Ltd	*Activity*	Textile manufacturing.
	Incorporation/ listing	Incorporated in South Africa, listed on the JSE in November 1986.
	Cash flow sources	Operations.
	Comments	Since 1989 South African Breweries were the major shareholder, controlling 60.7% of interest. Liquid assets of the company were deposited with Sabfin, a subsidiary of SAB. The company also owns property investment operations.
	JSE market capitalisation (April 2013)	Delisted in January 1999 after the acquisition of Da Gama Textile Co Ltd by Daun & Cie AG.
Tegniese & Ind Beleggings Beperk	*Activity*	Diversified conglomerate.
	Incorporation/ listing	Incorporated in South Africa in 1943, listed on the JSE in 1968.
	Cash flow sources	Operations and trade in investments.
	Comments	Part of the Rembrandt Group. Part of the Rembrandt Group. Rembrandt Group was mainly dealing with tobacco and cigarettes. During the 1970s the group diversifies. In 1988 local and overseas interest were separated through the founding of Compagnie Financiere Richemont AG (Swiss-listed). In 1995 Richemont and the group consolidate their respective interests in tobacco (Rothmans International), which merged with British American Tobacco held by the group and Richemont. In 2000, Rembrandt Group was restructured and split into Remgro and VenFin. BAT was unbundled in 2008.
	JSE market capitalisation (April 2013)	Delisted from the JSE in September 2000.
Tegniese Beleggingskorp Beperk	*Activity*	Diversified conglomerate.
	Incorporation/ listing	N/A.
	Cash flow sources	Operations and trade in investments.
	Comments	Part of the Rembrandt Group. Rembrandt Group was mainly dealing with tobacco and cigarettes. During the 1970s the group diversifies. In 1988 local and overseas interest were separated through the founding of Compagnie Financiere Richemont AG (Swiss-listed). In 1995 Richemont and the group consolidate their respective interests in tobacco (Rothmans International), which merged with British American Tobacco held by the group and Richemont. In 2000, Rembrandt Group was restructured and split into Remgro and VenFin. BAT was unbundled in 2008.
	JSE market capitalisation (April 2013)	Delisted from the JSE in September 2000.

Name	Company profile	
Rembrandt Beherende Beleg Beperk	*Activity*	Diversified conglomerate.
	Incorporation/ listing	Incorporated in South Africa in 1952, listed on the JSE in 1956.
	Cash flow sources	Operations and trade in investments.
	Comments	Part of the Rembrandt Group. Rembrandt Group was mainly dealing with tobacco and cigarettes. During the 1970s the group diversifies. In 1988 local and overseas interest were separated through the founding of Compagnie Financiere Richemont AG (Swiss-listed). In 1995 Richemont and the group consolidate their respective interests in tobacco (Rothmans International), which merged with British American Tobacco held by the group and Richemont. In 2000, Rembrandt Group was restructured and split into Remgro and VenFin. BAT was unbundled in 2008.
	JSE market capitalisation (April 2013)	Delisted from the JSE in September 2000.
Arb Holdings Limited	*Activity*	Electrical wholesaler.
	Incorporation/ listing	Incorporated in 1980 in South Africa as ARB Industrial Supply Co., listed on the JSE in November 2007.
	Cash flow sources	Income from operations.
	Comments	Cash and cash equivalents are needed for acquisitions. The aftermath of the financial crisis was seen as opportunity for acquisitions (Annual Report 2011).
	JSE market capitalisation (April 2013)	R1,133 million (rank 205 of 370 listed companies).
Africa Cellular Towers Limited	*Activity*	Manufacturing.
	Incorporation/ listing	Incorporated in South Africa in October 2000, listed on the JSE in November 2006.
	Cash flow sources	No income from operations, investment financed through sale of financial assets, share issuance and borrowing.
	Comments	Operations were loss-making. Finally, in 2012 a creditor has perfected a cession of debtor while the company also received liquidation applications.
	JSE market capitalisation (April 2013)	JSE listing suspended in May 2012. The company was liquidated in July 2012.
Moneyweb Holdings Limited	*Activity*	Internet media company.
	Incorporation/ listing	Established in 1997, incorporated in South Africa in December 1998 as Lexpub 4 Investment Holdings Ltd., renamed to Moneyweb Holdings in May 1999, listed on the JSE in June 1999.
	Cash flow sources	Income from operations, trade in businesses and share issuance.
	Comments	Cash and cash equivalents are held out of precaution and for acquisitions ("take bets", Annual Report 2012).
	JSE market capitalisation (April 2013)	R45 million (rank 346 of 370 companies).
Net 1 Ueps Technologies Inc	*Activity*	Provider of a universal electronic payment system.
	Incorporation/ listing	Incorporated in the US in 1997, operations going back to 1989, listed on the Nasdaq in 2006, secondary listing on the JSE in August 2008.
	Cash flow sources	Income from operations supplemented by share issuance.
	Comments	The company was awarded a (South African) government tender to distribute social grants in 2013.
	JSE market capitalisation (April 2013)	R3,769 million (rank 134 of 370 listed companies).
Aquarius Platinum Limited	*Activity*	Mining of platinum group metals.
	Incorporation/ listing	Incorporated in Bermuda in 1999, listed on the LSE in 1999, listed on the ASX in September 1999, listed on the JSE in December 2004.
	Cash flow sources	Income from operations supplemented by share issuance and borrowing.
	Comments	According to the company cash and cash equivalents will not be held unnecessarily on the balance sheet but redistributed to shareholders.
	JSE market capitalisation (April 2013)	R3,077 million (rank 145 of 370 listed companies).

Name	Company profile	
Msauli Asbes Beperk	*Activity*	Asbestos mining.
	Incorporation/ listing	N/A.
	Cash flow sources	Operations and disposal of assets.
	Comments	Mining operations were discontinued at the end of May 2001.
	JSE market capitalisation (April 2013)	Delisted from the JSE in March 2002.
Premier Pharmaceutical Co Ltd	*Activity*	Healthcare.
	Incorporation/ listing	N/A.
	Cash flow sources	N/A.
	Comments	N/A.
	JSE market capitalisation (April 2013)	Delisted.
South African Coal Mining Holdings Ltd	*Activity*	Coal mining
	Incorporation/ listing	Incorporated in South Africa in 1994 as Zenith, listing on the JSE, JSE listing suspended between 2000 and 2003, renamed to Yomhlaba in 2004, listing on the JSE in November 2004, JSE listing suspended in March 2005, renamed to South African Coal Mining Holdings Limited in 2007, listing on the JSE in August 2007.
	Cash flow sources	Operations.
	Comments	The company is a small ('junior') coal producer.
	JSE market capitalisation (April 2013)	R36 million (rank 354 out of 370 listed companies).
Blue Label Telecoms Limited	*Activity*	IT services and telecommunications.
	Incorporation/ listing	Going back to Blue Label Investments which was incorporated in South Africa in May 2001, restructured and renamed to Blue Label Telecoms in 2007, listed on the JSE in November 2007.
	Cash flow sources	Income from operations supplemented by share issuance and borrowing.
	Comments	In 2007, Microsoft acquired ca. 12% of Blue Label Telecoms interest and the two companies announced to jointly pursue preferred partnership initiatives in developing economies.
	JSE market capitalisation (April 2013)	R4,958 million (rank 123 of 370 listed companies).
Buffelsfontein Gm Co Ltd	*Activity*	Gold mining.
	Incorporation/ listing	No information available.
	Cash flow sources	Limited information available.
	Comments	The company held mature mining assets in 1995 with an estimated life span of 24 months. The company's assets were acquired by Simmer and Jack Mines and subsequently by Village Main Reef in 2011.
	JSE market capitalisation (April 2013)	Delisted in September 1997.
AdaptIT Holdings Limited	*Activity*	IT services.
	Incorporation/ listing	Incorporated in South Africa in September 1998 as AdaptIT.
	Cash flow sources	Operations and active share issuance.
	Comments	AdaptIT became a black-empowered company in 2007 after AdaptIT and InfoWave, a black-owned company providing web solutions, merged to form AdatIT Holdings.
	JSE market capitalisation (April 2013)	R244 million (rank 269 of 370 listed companies).
Buffelsfontein Gm Co Ltd	*Activity*	Gold mining.
	Incorporation/ listing	No information available.
	Cash flow sources	Limited information available.
	Comments	The company held mature mining assets in 1995 with an estimated life span of 24 months. The company's assets were acquired by Simmer and Jack Mines and subsequently by Village Main Reef in 2011.
	JSE market capitalisation (April 2013)	Delisted in September 1997.

Name	Company profile	
AdaptIT Holdings Limited	*Activity*	IT services.
	Incorporation/ listing	Incorporated in South Africa in September 1998 as AdaptIT.
	Cash flow sources	Operations and active share issuance.
	Comments	AdaptIT became a black-empowered company in 2007 after AdaptIT and InfoWave, a black-owned company providing web solutions, merged to form AdatIT Holdings.
	JSE market capitalisation (April 2013)	R244 million (rank 269 of 370 listed companies).
Gazankulu Gold Holdings Ltd	*Activity*	Gold mining.
	Incorporation/ listing	No further information available.
	Cash flow sources	No further information available.
	Comments	No further information available.
	JSE market capitalisation (April 2013)	JSE listing suspended in September 1995, delisted in November 1998.
Allied Electronics Corporation Ltd	*Activity*	Investment holding company.
	Incorporation/ listing	Forerunner company (Allied Electric) was incorporated in South Africa in 1965. Allied Technologies (Altech) was listed at the JSE in 1975.
	Cash flow sources	Income from operations, trade in businesses and share issuance.
	Comments	Until 2003 accounting practice illustrated that in-house financial services amounted to a substantial share in group assets (ca. 10-30%) and operating income (ca. 10%). Altron securitised the entire portfolio of the subsidiary Fintech, engaged in the financing and administration of leasing office equipment which the group itself is producing. Fintech was sold in 2006.
	JSE market capitalisation (April 2013)	7,107 million Rand (ranked 110 out of 370 listed companies).
Karos Hotels Ltd	*Activity*	Consumer services.
	Incorporation/ listing	N/A.
	Cash flow sources	Operations.
	Comments	The company also operates an investment fund, Karos Property Investment Fund.
	JSE market capitalisation (April 2013)	Delisted in November 2001.
Minorco Societe Anonyme	*Activity*	Mineral mining, paper and packaging production and agribusiness.
	Incorporation/ listing	Incorporated in Luxembourg, listed on the JSE, the Luxembourg, London and Paris Stock Exchanges.
	Cash flow sources	Operations.
	Comments	N/A.
	JSE market capitalisation (April 2013)	Delisted from the JSE in May 1999 due to a merger with Anglo American Corporation of South Africa to establish Anglo American plc.
Goodhope Diamonds Ltd	*Activity*	Until 2004: the marketing of stallion shares and services, with subsidiaries engaged in breeding of thoroughbred horses for resale, the racing of thoroughbred horses and farming activities; since 2004: diamond mining.
	Incorporation/ listing	Incorporated in South Africa in 1983 as Oakfields Thoroughbreds and Leisure Industries Limited, JSE listing in January 1988, renamed to Goodhope Diamonds Limited in 2004.
	Cash flow sources	Increasingly loss-making operations (with exceptions) financed through borrowing and other financial obligations in recent years.
	Comments	After an unsuccessful attempt to enter the Asian market for thoroughbred horses the company shifted activities into diamond mining. Mining operations had to be stopped due to a legal dispute. In order to settle liabilities the company tried to sell its diamond mining assets which failed in 2009.
	JSE market capitalisation (April 2013)	Delisted from the JSE in October 2010.

Name	Company profile	
Tollgate Holdings Limited	*Activity*	N/A.
	Incorporation/ listing	N/A.
	Cash flow sources	N/A.
	Comments	N/A.
	JSE market capitalisation (April 2013)	N/A.
Omnia Holdings Limited	*Activity*	Manufacture, distribution and trade of chemicals, mining explosives and accessories, fertilizers and speciality fertilizers.
	Incorporation/ listing	Incorporated in South Africa in 1953 as Omnia Farm Services, listing at the JSE in January 1980.
	Cash flow sources	Strong operating gains, rising capital investment expenditure (due to expanding operations) mainly financed through internal cash flow and borrowing rather than equity.
	Comments	Well established supplier and manufacturer of chemicals. The company was strongly overcapitalised during the 1970s but had subsequently very low cash-to-current liabilities ratios.
	JSE market capitalisation (April 2013)	R10,625 million (rank 89 of 370 listed companies).
Rhombus Vanadium Holdings Ltd	*Activity*	N/A.
	Incorporation/ listing	N/A.
	Cash flow sources	N/A.
	Comments	N/A.
	JSE market capitalisation (April 2013)	Delisted.
Union Mines Ltd	*Activity*	Mineral mining.
	Incorporation/ listing	Incorporated in South Africa in 1949, listed on the JSE in 1981.
	Cash flow sources	N/A.
	Comments	N/A.
	JSE market capitalisation (April 2013)	Delisted from the JSE in July 2003.
Rale Holdings Ltd.	*Activity*	N/A.
	Incorporation/ listing	N/A.
	Cash flow sources	N/A.
	Comments	N/A.
	JSE market capitalisation (April 2013)	Delisted.
The DON Group Limited	*Activity*	Hotel operations.
	Incorporation/ listing	Incorporated in 1946 as Bristol Industrial Corporation Ltd, listed on the JSE in 1947, after a reverse take-over by Don Apartments (founded in 1988) and restructuring, renamed to The DON Group Ltd. in November 1994.
	Cash flow sources	Income from operations has been declining during the late 2000s and had to be supplemented by borrowing, including a loan from the Industrial Development Corporation.
	Comments	The company became a cash shell after disposing of its property portfolio in 2013. The JSE listing was suspended in February 2014 since the company failed to acquire any operational assets. The decision was made to repurchase all company shares and to delist the company subsequently.
	JSE market capitalisation (April 2013)	R53 million (rank 341 of 370 listed companies).
Anglo American Plc	*Activity*	Mining of platinum group metals, gold and diamonds and significant interests in coal, base and ferrous metals, industrial minerals and forest products.
	Incorporation/ listing	Created in May 1999 as combination of Anglo American Corporation of South Africa and Minerco Societe Anonyme, listed on the LSE in May 1999, secondary listings on the JSE and the Swiss SWX, listed on the FSTE 100 in June 1999 and on the Botswana and Namibian Stock Exchanges in June 2001.
	Cash flow sources	Income from operations, trade in businesses and share issuance.
	Comments	The single most influential South African conglomerate at least until the mid-1995.
	JSE market capitalisation (April 2013)	R317,297 million (rank 5 of 370 listed companies).
Huntcor	*Activity*	Consumer goods production.
	Incorporation/ listing	Incorporated in South Africa, listed on the JSE.
	Cash flow sources	N/A.
	Comments	Huntcor was part of the HLH Group. In 1997, it distributed its interest in HLH and Rainbow Chicken Limited to its shareholders in specie and subsequently delisted.
	JSE market capitalisation (April 2013)	Delisted from the JSE in December 1997 after unbundling.

Non-available information is indicated with 'N/A'. Instances of missing company information occur exclusively for non-financial corporations that were delisted during the 1990s. Hence, their listing is likely to have fallen into the time period 1970-1990 (or earlier), which is not entirely covered by the INET BFA database. To represent the findings of the detailed analysis that was conducted by the author a two-pronged approach is used: first detailed case studies of the top 20 overcapitalised companies are presented. The amount of case studies (that is the number 20) was not arbitrarily chosen. Case study research is typically regarded to lose depth when going much beyond a dozen cases (Gerring, 2007). As will be discussed below, the chosen 20 cases at closer examination boil down to 14. The following section then deals with the types of liquidity preference among the 20 most strongly overcapitalised non-financial corporations. These are the JSE-listed non-financial companies with the 20 highest average cash ratios for the period 1994 to 2012. The second prong of the analytical approach used here is a categorised representation of the full company survey (all 132 cases), using 15 categories identified as critical through qualitative data analysis. This categorised account of the qualitative findings is presented in Table 4.5., once again for the top 20 companies.

The table gives an overview of the sectors, in which the overcapitalised non-financial companies are listed. As described in the sectoral analysis above, a large share of these non-financial companies are either listed as basic materials producers – and in fact, mainly mining corporations – or as industrials companies. Therefore, firms have been categorised either as mining companies, industrials or non-mining firms. The last label implies that the companies are neither mining nor industrial corporations.

Furthermore, non-financial corporations are classified either as young or established firms. Companies which are no older than 10 years qualify as young. This is in line with the World Bank's categorisation of firm age (Ayyagari, Beck, & Demirgüç-Kunt, 2003). Since 2012 is the last year in the

dataset, firms that were incorporated in 2002 or later, and were still in existence in 2012, show up as young. Delisted firms, which are labelled with a 'D' in column 5 of Table 4.5., are considered young companies if their life span from incorporation to delisting did not exceed 10 years. These companies might have carried on operating after their delisting.

However, this cannot be tracked with available data. In most cases, companies delist because they are acquired by another corporation and absorbed into the latter's company structures. Hence, for the purpose of this thesis, the data available show these non-financial corporations' operations during their early years, justifying the young firm label. The subsequent columns reflect findings from cash flow statement analysis, namely the regularity of cash flow from operations. Cash flow statements typically contain three components: net cash from operations, net cash from investment activity and net cash from financing activity. These three are then summed up to give the overall change in the cash position for a company in a given accounting year. The analysis here assesses whether and how reliably the surveyed companies can generate positive net cash flow from their business operations. This provides an indication of cash flow volatility.

In column 6, firms are assessed as to whether they are able to generate regular positive net cash flow from operations (labelled with 'yes' in Table 4.5.), only irregular positive net cash flow from operations ('irregular'), or no positive net cash flow from operations ('no'). No positive net cash flow means the firm either does not generate profit or runs a loss. In the latter case, the company will have to run down existing stocks (of liquid assets) to cover these losses. Therefore, the reliability of net cash flow from operations can be expected to affect non-financial companies' liquid asset holdings. Firms experience irregular positive cash flow, if at least half of the years for which financial information is available show either no profit or a loss.

Table 4.5. Top 20 overcapitalised JSE-listed non-financial firms

	1 Firm name	2 Sector	3 Mining/ industrials/ non-mining	4 Young/ established	5 Delisted	6 Cash flow from operations	7 Substantial financial investment	8 Mostly cash	9 M&A strategy	10 Subsidiary/ productive asset trading	11 Exploration company	12 Diversified holding company	13 Foreign listing	14 Cash shell	15 Property & financial investmen	16 Unbundling
1	**CMO - Chrometco Limited**	Basic materials	mining	young		no		x	active	x	x					
2	**WTC - World Educational Technologies Ltd**	Technology	non-mining	young	D	no		x							x	
3	**BNX - Barnato Exploration Ltd**	Basic materials	mining	established	D	irregular	x				x					
4	**USV - United Service Technologies Ltd**	Consumer services	non-mining	established	D	no	x									
5	**VIL - Village Main Reef Limited**	Basic materials	mining	established		no (1995-2010)	x		active							
6	**RDX - Randex Ltd**	Basic materials	mining	established	D	yes					x					
7	**PGRP - Progress Industries**	Consumer goods	non-mining	established	D	yes								x		
8	**WLO - Wooltru Limited**	Consumer goods	non-mining	established	D	not since early 2000s	x		active	x		x			x	x
9	**SSA - Sasani Limited**	Consumer services	non-mining	established	D	yes	x		active	x				x		x
10	**WGR - Witwatersrand Cons Gold Resources**	Basic materials	mining	young		no			active		x		x			
11	**FRE - Free State Development & Invest Corp Ltd**	Basic materials	mining	established	D	no	x				x					
12	**AVG - Avgold Ltd**	Basic materials	mining	established	D	yes	x		active	x	x		x			
13	**KWR - Kiwara Plc**	Basic materials	mining	young	D	no		x			x		x			
14	**SEP - Sephaku Holdings Limited**	Basic materials	mining	young		no					x					
15	**KBO - Kibo Mining Plc**	Basic materials	mining	young		no					x		x			
16	**AEA - African Eagle Resources Plc**	Basic materials	mining	established		no		x	active	x	x		x			
17	**CZA - Coal Of Africa Limited**	Basic materials	mining	established		no	x		active	x	x		x			
18	**MRI - Mine Restoration Investments Ltd**	Industrials	industrials	young		no										
19	**SIM - Simmer And Jack Mines Limited**	Basic materials	mining	established	D	irregular since early 1990s	x		active	x	x		x			
20	**ODV - Oceana Investment Corporation Plc**	Consumer services	non-mining	established	D	irregular						x				

Non-financial companies with no or negative net cash flow for more than three quarters of the years for which data are available qualify for the label 'no cash flow from operations'. Companies can draw on their liquid assets if operational cash flow is absent. Hence, the subsequent two categories assess firms' liquidity holdings. Firms are marked as holding substantial financial investment if their overcapitalisation ratio (OCR) is more than twice as high as their cash ratio. This, of course is a very conservative measure for overcapitalisation, indicating that more liquid assets are held in types of financial investment than in cash and cash equivalents. Companies for which the difference between the OCR and the cash ratio is marginal – that is, it does not exceed 10% of the cash ratio – are classified as holding mostly cash.

The next two columns provide information about the companies' attitude towards mergers and acquisitions (M&A). As argued in chapter 3, overcapitalisation can be the outcome of firms' speculative investment behaviour, which focuses on acquiring subsidiary companies and selling them, or their assets, on at an increased price. This is speculative if the company was not acquired for future income, but merely to realise a gain in its market value, which means its equity price if it is a listed company. Hence, the ultimate aim of the merger or acquisitions in such a case was a capital gain rather than future income in production.

It is not easy to identify this process. Typically, mergers and acquisitions are declared in listed firms' financial information.[1] However, what happens to the acquired assets subsequently cannot always be traced in the cash flow statement. Therefore, the information below only classifies a non-financial company as trading subsidiaries if there are at least two instances in the firm's cash flow

[1] In Table 4.5., a non-financial firm is labeled as actively engaging in mergers and acquisitions if there are at least two instances of mergers and acquisitions documented in the company's cash flow statement. It is assumed that one-off transactions are not sufficient to qualify for this label.

statement where a subsidiary (or a productive asset such as a mine) is declared as sold. In this sense, column 10 (subsidiary trade) is a subcategory of column 9 (M&A strategy). If a company simply declares an active M&A strategy without acting on it (yet), this will show up in column 9. Similarly, mergers or subsidiary purchases are captured under the 'M&A strategy' heading, but not as subsidiary trading. So, the characteristic 'subsidiary/productive asset trading' aims at identifying a speculative motive among the top 20 overcapitalised non-financial firms. By contrast, firms that have an active mergers and acquisitions strategy might pursue growth and/or diversification of their internal capabilities to enhance their competitive stance in the industry. In this case, they would in fact hold liquidity on their balance sheet based on a finance motive, targeting the takeover of another company with the aim of generating more income from the targeted firm's assets than the firm would be able to achieve itself in future.

In a Penrosian and Keynesian sense, this would be an entrepreneurial mergers and acquisitions strategy (Penrose, 2009). However, if corporations have active mergers and acquisitions strategies, and simultaneously engage in frequent selling off of subsidiaries, this implies that they have a tendency to acquire other companies with the intension of generating a speculative profit. The speculative profit arises from a value gain in the assets that are part of acquired firms, rather than a profit generated in production.

The three columns marked 'Substantial financial investment', 'M&A strategy' and 'Subsidiary/productive asset trading' in Table 4.5. are really at the heart of the analysis presented here, as they link the theoretical propositions of the previous chapter to the evidence gathered through the detailed study of company profiles. If a non-financial firm is labelled as having substantial financial investments, its liquidity goes well beyond its cash holdings. This means the firm is holding financial investment such as corporate bonds or equity,

generating rentier income in the form of dividends and interest payments and/or capital gains, if these financial assets can be sold after rising in price.

With the former type of income – dividends and interest payments – firms' motivation to hold these liquid financial assets is precaution, generating additional cash flow in case productive operations are disappointing. However, this motivation can easily transform into, or coexist with, a speculative motive when the financial assets in question are held to speculate on a capital gain.

The last six columns provide further information about the characteristics of the overcapitalised non-financial companies, which include some South Africa-specific dimensions. Among the overcapitalised mining corporations, companies involved in mining exploration are prevalent. Therefore, column eleven indicates whether the non-financial corporation in question is an exploration company.

Some other reoccurring features among overcapitalised non-financial companies are noteworthy: some of them are diversified holding companies with subsidiaries operating in two or more different industries; they are also listed on at least one more stock exchange abroad; they have been a cash shell at some point during their existence, meaning they did not possess any operational assets; they engage in profitable real estate investment; or they have been unbundling assets, which refers to the sale of non-core businesses by strongly diversified conglomerates, a process that gained traction in South Africa during the late 1990s. The last five columns deal with these different characteristics.

It should be highlighted that the attribute 'cash shell' is most often the outcome of another companies' mergers and acquisitions strategy, since the company that turns into a cash shell typically will have just sold off its operations to another business. In this sense, it is (just like unbundling) a symptom of large corporations buying and selling their subsidiaries, be it for speculative gains or with the intention of generating an income stream.

As stated above, the aim of this chapter is to identify the motives behind the liquidity preference of overcapitalised JSE-listed non-financial corporations. Thus, the analysis attempts to reveal why these non-financial firms, which have ready access to the South African capital market, hold such large volumes of liquid assets relative to their short-term debt financing needs. Before highlighting the particular features of all 132 overcapitalised firms, the top 20 overcapitalised non-financial companies and their liquidity preferences will be discussed in detail, which constitutes the first part of the aforementioned two-pronged analysis.

4.4.1. Types of liquidity preferences among the top 20 strongly overcapitalised non-financial firms

4.4.1.1. The sectoral breakdown

For the period 1994 to 2012, the top 20 strongly overcapitalised non-financial firms reaffirm results from the sectoral analysis (see section 4.3.): 13 of these 20 were listed as basic materials producers, all of which were mining companies. The only company among these 20 listed under industrials, namely Mine Restoration Investments (MRI), is also closely related to mining activity because it deals with the decontamination of depleted mining assets.

It appears that many of the companies in the full set of strongly overcapitalised non-financial corporations that are listed as industrial corporations have had major mining interests in the past. One such example is Lonrho. Lonrho only demerged from its mining interests, which are now part of Lonmin, in 1998. Alternatively, the label 'industrials' often serves as a catch-all category for highly diversified company groups like Remgro (formerly Rembrandt), which possesses industrial subsidiaries alongside interest in healthcare providers and telecommunications companies.

Therefore, sector classifications – and especially the 'industrials' label – should be treated with caution (Fine & Rustomjee, 2006). For the current analysis the sector classifications provided by INET BFA – which always refers to the most recent sector qualification of the listed corporation – will be retained and supplemented by insights from the company profiles assembled, if it becomes necessary to decide about a company's industry status. The problem of industry affiliation does not only concern industrial and mining corporations. In fact, it can be as fundamental as the question whether a company should be classified as a financial or a non-financial business. The remaining six companies in the top 20 are all listed as consumer goods or consumer services companies, with the exception of World Education Technologies, which figures under 'technology'.

However, the latter corporation was effectively a property investment company, while another company in this sample – United Service Technologies – engaged in pure financial investment. World Education Technologies acquired a property investment portfolio in 2000 before delisting in 2001. United Service Technologies in turn had no productive operations of their own until 2004 – when it was delisted – instead merely receiving income in its role as a holding company from financial investment in a single company, namely UT Worldwide Inc., which is a supply chain solutions provider and by itself not overcapitalised. Thus, both companies are strictly speaking part of the finance, insurance and real estate (FIRE) sector, rather than non-financial firms.

It is important to note that this analysis is only able to identify misleading industry affiliations effectively because of the qualitative examination that was undertaken in the detailed company studies. Simple regression analysis would not be able to pick up these subtleties, potentially also generating misleading results. For Progress Industries and Oceana Investment Corporation detailed qualitative data were not available because their delisting took place during the

early 1990s.[2] Finally, Wooltru Limited and Sasani Limited were both engaged in unbundling, which explains their high cash ratios. Wooltru was in the process of a protracted selling of assets and liquidation between 2001 and 2009, while Sasani unbundled successfully by 1996, becoming a cash shell. It subsequently acquired media industry assets (in 1997), but finally delisted by the mid-2000s. Unbundling refers to a process during which large holding companies sold off non-core business assets, mainly during the 1990s and early 2000s, after the end of the country's economic isolation (see chapter 3, part 3.3.). In these transactions, holding companies were effectively selling off their subsidiaries.

As described in chapter 3, the emergence of highly diversified conglomerates and the concentration of business interests (especially among the group of big five companies[3]) was a consequence of historical developments in South Africa. In an attempt to raise stock market valuation and reduce exposure to the South African economy, large corporations reorganised their complex business structures and sometimes even moved their primary listings abroad (Carmody, 2002).

The internationalisation of South Africa's formerly dominant company groups, and similarly the internationalisation of corporate ownership in the country, is also visible when scrutinising the major shareholders behind the top 20 strongly overcapitalised firms. Only two of three (United service Technologies Ltd, Wooltru Limited and Coal of Africa) are partly owned by one of the big five. However, the shares held by Old Mutual and Anglo American in the three named companies do not exceed 15% and therefore do not constitute controlling share ownership (INET BFA, 2015). One should remember that at the height of

[2] Progress Industries were suspended from the JSE in 1994 and delisted in 1996. Qualitative data are not available for the years before 1994, explaining why there is limited information on Progress Industries. Oceana Investment Corporation was delisted in 1998 after Park Lawn Limited acquired the company. There are neither financial statements nor annual reports available for Oceana Investment.

[3] As explained in the previous chapter these are: Anglo American/De Beers, Rembrandt/Remgro, SANLAM, SA Mutual/Old Mutual and Liberty Life/Standard Bank.

their dominance 90% of total JSE capitalisation was controlled by these groups. Hence, among JSE-listed companies the lack of a link to one of these groups would be an exception rather than the rule. Nevertheless, the share of JSE-listed companies controlled by the big five has since diminished to hardly more than 20% by 2012 (Makhaya & Roberts, 2014).

Overall, mining companies dominate the top 20 of strongly overcapitalised non-financial companies listed on the JSE. Therefore, it is important to explain the motives behind their liquidity preferences. It is striking that these mining companies are mostly engaged in resource exploration. Some of them were long-established companies which were delisted in the 1990s – namely Barnato Exploration, Free State Development and Investment Corporation (hereafter referred to as Fredev) and Avgold – while many are emerging exploration and mining-cum-exploration firms, namely Chrometco, Witwatersrand Consolidated Gold Resources (hereafter referred to as Wits Gold), Kiwara, Sephaku Holdings Limited (hereafter Sephaku), Kibo Mining and African Eagle Resources (AER).

Typically, they focus on resource exploration, rather than actually engaging in income-generating mining activity. As consequence, their net cash flow from operations is either all together absent or irregular. Thus, Wits Gold, Kiwara, Sephaku, Kibo and AER were not able to generate positive net cash flow from mining operations. The same is true for the delisted exploration companies Barnato and Fredev, that had either irregular or no positive operational net cash flow (and in these cases even gross cash flow), and became reliant on interest and dividend payments as well as external financing (see Table 4.5.). Chrometco only started actual mining activity in 2010 with no steady net cash flow from operations prior to that date.

Understandably, firms that are uncertain about when they will be able to generate positive (or any) cash flow from operations, while facing large unexpected (and in fact expected) expenses – for example, on capital-intensive

mining and exploration works – will keep large sums of liquid assets to be able to meet future payment commitments. Hence, their liquidity preference is precautionary to some extent, because, as pointed out by Minsky (1976), liquid assets serve as insurance. These firms' financial positions are hedged by large volumes of liquid assets. However, at the same time it can be argued that their mining operations are inherently speculative, since they depend on the increase in the asset value on their balance sheet, which is pursued through exploration.

The impact of uncertain cash flow on the corporate liquidity preference is exemplified in the experience of another non-financial company among the top 20: Sephaku. The company was incorporated in South Africa in 2005, listing on the JSE in 2009. Sephaku is attempting to enter the South African cement industry, which is perceived to be a mature sector, dominated by few producers (Sephaku Holdings Ltd, 2009b).

Nevertheless, given growing infrastructure and residential construction in South Africa Sephaku argued that current domestic capacity would not suffice to meet future demand (Sephaku Holdings Ltd, 2009a). The economic viability of these expectations was validated in 2013 through a large long-term loan (that is, Sephaku securing external funding), jointly granted to Sephaku by Nedbank and Standard Bank (Sephaku Holdings Ltd, 2013). The company reported its first gross profit from operations (of R15.6 million) in March 2013 for the previous nine months. As a consequence, the company's cash ratio reduced drastically from 2,500% in 2012 and an average of more than 1,000% for the period 2009 to 2012 to 24% in 2013 (INET BFA, 2013). Thus, once funding, and subsequently cash flow, were secured thanks to a long-term financing commitment from two large banks and successfully launched mining operations, respectively, Sephaku's precautionary motive lost urgency. This does not mean that going forward the company's liquidity preference will remain low. Even if mining

operations are profitable, Sephaku might develop a speculative motive to hold liquidity with the intention of buying and selling mining assets.

Non-financial corporations can use their liquid funds to acquire other mining companies and assets, trading them with a view to cashing in on capital and asset value gains. In the case of mining companies, their profits often depend crucially on the rise of their subsidiaries' (equity) price, which is influenced by international mineral prices. For example, a rising gold price will induce a price rise in gold mining assets, *ceteris paribus* increasing the value of a gold-mining subsidiary. Recently, research has suggested that prices in international commodity markets inflate as they become targets of financial investment and new financial instruments, such as commodity-linked derivatives (see, for example, Flassbeck, 2012 and Ashman, Mohamed, & Newman, 2013). This means commodity markets are likely to become increasingly prone to price inflation (and deflation), similar to price dynamics experienced in equity markets.

Abstracting from these claims that commodity markets are financialised, the mere rise in commodity prices due to rising demand has a similar effect, because increased prices for minerals raise the value of mining rights and deposits. Thus, the mid-1990s saw a boom in global investment into mineral exploration (Bridge, 2004) and so did the early 2000s in the run up to the crisis.

Trades in mining assets among mining companies might involve the sale and purchase of listed equity, but does not have to do so necessarily. Individual mines are sometimes connected to distinct subsidiary firms. These firms might be listed or not. If they are listed, equity will be purchased when another corporation acquires the firm. Otherwise – if the firm is not listed – its ownership will be sold to the acquiring corporation. In the former case, it is apparent how a capital gain can be achieved: as the firm is listed, an inflating equity market can raise its price to a level where it becomes profitable for the holding company to

sell it. Arguably, a capital gain can also be generated from a non-listed company, if the holding company treats its subsidiary like an asset held for sale.

4.4.1.2. Changes in the role of mining-finance houses

Mining exploration activity is inherently speculative and also very capital-intensive. Historically, the mining-finance houses funded these operations out of their abundant cash flow. In fact, a major function of the mining-finance houses was the provision of financial and scientific expertise to the mines and exploration projects, which were part of the company group. In this way, economies of scale could be achieved, since the cost of highly specialised skills that mining projects only need at certain points in their life cycle could be carried by a large number of mines.

Up until the mid-20th century the typical financing structure for a new mine was organised in such a way that the mining-finance house carried out the exploration, taking on risk and initial costs. Once mineral deposits were confirmed and mining rights secured, a mining company was founded and floated on the JSE. Part of the raised capital was used to acquire the mining rights from the mining-finance house, by way of compensation for its initial exploration risk and the costs incurred. The remaining funds were utilised for mine development (Hagart, 1952).

These financing patterns changed fundamentally during the 1950s as institutional investors increasingly entered the equity markets. Their priority was to reduce the risk of their financial investments. Thus, newly floated mining companies were not attractive because they were too uncertain an investment. In response, mining-finance houses stepped in, taking exploration activity and mine development onto their balance sheets (Hagart, 1952). This reduced risk and made mining operations more attractive for institutional investors, since investing in a mining-finance house meant that highly speculative and uncertain

activity like exploration was fully compensated by the large portfolio of operating and profit-making mines the house possessed.

This traditional role of South African mining-finance houses changed during the 1990s, when large mining groups like Anglo American offloaded their non-core operations. This appears to have included exploration companies. Thus, as observed by Jubilee Platinum – a young and small mining exploration company, which was among the 129 surveyed non-financial JSE-listed firms – large mining houses have started to outsource the more risky exploration activity. However, this appears to be a global trend, as stressed by the London-based (but also JSE-listed) mining exploration company:

> 'Since the mid-nineties, major mining companies have tended to scale down their in-house exploration activities and have instead, either funded exploration companies or acquired companies who have made a significant discovery' (Jubilee Platinum PLC, 2006, p. 5).

The strong presence of exploration companies on the JSE in the New South Africa also appears to be a result of this structural change. South Africa counts as one of the traditional investment targets in the global mining industry (Bridge, 2004). Moreover, a listing on the JSE – given its historical emergence as capital market to fund mining activity – is recognised as a strategic benefit for mining companies.

In the sample of the top 20 strongly overcapitalised firms, 12 out of 13 mining companies maintained exploration activities, half of which were incorporated after 1994 and had no regular income from operations, mainly focusing on exploration. Their ownership structures seem to reflect this shift in the role of mining finance houses. Only two out of the 12 mining companies that undertook exploration were fully owned by a large mining corporation, which acted as mining finance house, providing expertise and, crucially, funding. These two were Barnato (fully owned by Johannesburg Consolidated Investments, JCI) and Wits Gold (owned by Sibanye Ltd, which in turn is part of the Gold Field Group

incorporated in the late 1960s). All other exploration (or mining-cum-exploration) companies relied on capital market financing and multiple shareholders, taking up smaller volumes of their stocks.

In contrast to large mining houses with strong financial positions and regular cash flow, younger and smaller mining enterprises in South Africa struggle to obtain external finance. For South African mining companies, this has been further exacerbated since the isolation of the South African economy ceased with the end of apartheid and the onset of financial liberalisation. As result, large South African institutional investors (like Old Mutual, formerly SA Mutual) have reoriented their investment strategy towards the global market.

> 'It remains extremely difficult to raise funds for exploration and small mining projects in South Africa. Institutional investors during past decades had the benefit of investing in large mining and mining finance companies in a relatively isolated economy' (Thabex Exploration Limited, 1998, p. 2).

In the past, large mining houses taking on exploration activity were able to reduce liquid assets held on their balance sheet through economies of scale. These companies tended to be highly profitable with strong cash flow and abundant retained earnings. Simultaneously, they were always able to access external finance if necessary, due to their strong links to financial institutions at home and abroad, while backing their liquidity demands with large balance sheets.

Therefore, the withdrawal of large mining corporations from exploration is likely to have contributed to an increasing liquidity preference in the mining industry globally. The exploration companies' business model, in turn, depends on asset value appreciation and is therefore risky and speculative in nature. International resource prices dictate what quantity and quality of mineral resources must be found to justify exploration and ultimately mining activity. Exploration companies are aware that their activity is highly speculative, as the following quote shows:

> 'Mineral exploration is highly speculative due to a number of significant risks, including the possible failure to discover mineral deposits that are sufficient in quantity and quality to justify the completion of pre-feasibility or feasibility studies' (Wits Gold, 2007, p. 21).

4.4.1.3. Speculation in mining subsidiaries

Among the thirteen mining companies in the top 20, there are at least four exploration or exploration-cum-mining companies that appear to hold cash and cash equivalents well in excess of their current liabilities (with hardly or no non-current liabilities on their books), and are actively trading in subsidiary companies. In Table 4.5. these exploration companies are characterised by no or irregular cash flow combined with active subsidiary trade (see columns 6, 10 and 11). The four are: Chrometco, AER, Coal of Africa and Simmer and Jack. Their liquidity preference is likely to be influenced by the desire to acquire new subsidiaries quickly, while avoiding illiquidity due to the lack of regular cash flow from operations.

Chrometco's gamble over their Rooderand Chrome subsidiary is a fitting illustration of how an exploration company can generate capital gains on its mining assets. In 2006, Rooderand Chrome was acquired by Chrometco for a R600,000 cash payment and a share issue worth R2million. As part of the deal, Chrometco agreed to buy back the shares a year later (Chrometco Limited, 2007). Subsequently, in 2007, Rooderand Chrome was sold to Deco Metal, an Austrian mining company, for R62million. At that point Chrometco had made some minor investments into the mining site, effectively generating a profit of more than R50million. This profit was made against the background of the global commodity boom, allowing Chrometco to make a capital gain on the subsidiary.

However, the case also illustrates that one and the same asset – or subsidiary – can be acquired for both asset price speculation and production; and how the investing company's intentions can change over time. The sale of Rooderand Chrome was conditional on the renewal of mining rights and Chrometco

shareholders' approval. Initially, a management agreement was put into place between Chrometco and Deco Metal, according to which Deco Metal would lease the mine for an annual payment of R13 million. The contract intended to run over five years until 2011 when the mine was meant to go over into Deco Metal's possession given the fulfilment of all sale conditions (Chrometco Limited, 2008). Yet, in 2011 – after a revaluation of the mining asset – Chrometco's shareholders decided against a sale because the asset value had increased (Chrometco Limited, 2011). This means that the capital gain generated through the sale agreement made in 2007 was deemed insufficient a selling price by 2011 given subsequent developments in commodity prices. Shareholders believed the exploitation of the asset by Chrometco would yield larger profits than the intended sale, which was cancelled as consequence.

Importantly, the management contract had provided vital cash flow during a period, in which Chrometco was facing losses from its (non-mining) operations. After re-acquisition of the asset the project suffered a severe setback in 2012 when international chrome prices declined substantially, making large-scale mining of chrome at Rooderand economically unviable (Chrometco Limited, 2012).

Hence, financed by capital markets — namely through equity issuance — Chrometco was able to acquire a mining asset in the attempt to make a speculative profit, i.e. selling it on after a value gain. This is speculation à la Keynes (1936), since the profit on the investment was gained through a price rise, rather than through an income stream generated by productive operations. Crucially, the speculation and the capital gains realised were connected to a real asset rather than financial instruments.

The fact that Chrometco finally decided against this option, and for investment into actual mining operations, exemplifies the close connection between speculative and entrepreneurial activity. Equally, this means that liquidity

motives can be closely intertwined. Chrometco's motivation to hold large volumes of liquid assets was simultaneously precautionary – since operational cash flow was absent – and speculative – since they were used to finance asset acquisitions that could generate capital gains.

4.4.2. Types of liquid assets held among the top 20 strongly overcapitalised non-financial firms

Another important observation from the top 20 sample is that the types of liquid assets held by strongly overcapitalised non-financial firms vary strongly. Some companies hold mostly cash and cash equivalents on their balance sheets. Among the top 20, this was the case for four firms, namely the three mining companies Chrometco, Kiwara and AER as well as World Educational Technologies, whose status as a non-financial company is doubtful, as argued above. World Education Technologies appears to have amassed liquidity in the form of cash in order to transform itself into a property investment company in the early 2000s, before subsequently delisting.

More generally, it seems that young companies often hold on to cash and cash equivalents (column 8 in Table 4.5.), while more established strongly overcapitalised non-financial firms typically invest into more sophisticated financial assets (column 7 in Table 4.5.). Both Chrometco and Kiwara are young mining exploration firms according to classifications employed. It seems that generating cash flow through liquidity management becomes more important for firms over time. Chrometco, which incorporated in South Africa in 2002, changed its liquidity management style over time. Maintaining a focus on cash and cash equivalents, the company shifted its cash reserves from a zero to a variable interest rate arrangement in 2008. The observation that there is a divide between young and established non-financial corporations in their type of liquidity management (that is, cash versus financial investment) will also become clear

when assessing the full set of strongly overcapitalised non-financial firms, i.e. all 129 companies, further below.

At the extreme, financial investment undertaken by a non-financial company might turn the company into a financial rentier, when all productive operations cease and only financial income is generated. This has happened among the companies in the top 20 sample, for example to Village Main Reef Limited (hereafter referred to as Village). Village is a well-established South African gold mining company. It was incorporated in 1934 but, by 1995, had to cease gold extraction due to waning profitability. Subsequently, the corporation concentrated on winding down operations. Yet, its large volume of financial assets, including cash and cash equivalents, as well as funds invested into a mine rehabilitation fund, allowed the company to survive for another 15 years without generating profits from actual mining operations. Hence, Village turned into a pure rentier firm. Gold production was only resumed in 2010 after the acquisition of Simmer & Jack's mining assets. This case demonstrates that even a purely precautionary motive – in contrast to outright speculation – behind corporate liquidity preference can turn an entrepreneurial non-financial company into a rentier firm.

Importantly, Village's liquidity holdings helped raise sufficient external funds for a reverse takeover of Simmer & Jack in 2011. By 2012 Village had acquired all of Simmer & Jack's mining assets. This transaction left only a cash shell of Simmer & Jack, which itself was one of the oldest South African mining ventures, going as far back as 1887. Given the declining volume and quality of Simmer & Jack's mining assets and their inability to consistently generate profits, Simmer & Jack abandoned their mining activities, delisting from the JSE in April 2013. Nevertheless, an analysis of the company's cash flow statements shows that equity finance also prolonged their life span, generating cash inflows when regular operations were making losses. Similarly, Coal of Africa – an Australian

mining business incorporated during the late 1970s – has used capital markets to finance the acquisition of new mining assets, in response to declining profitability of their Australian operations.

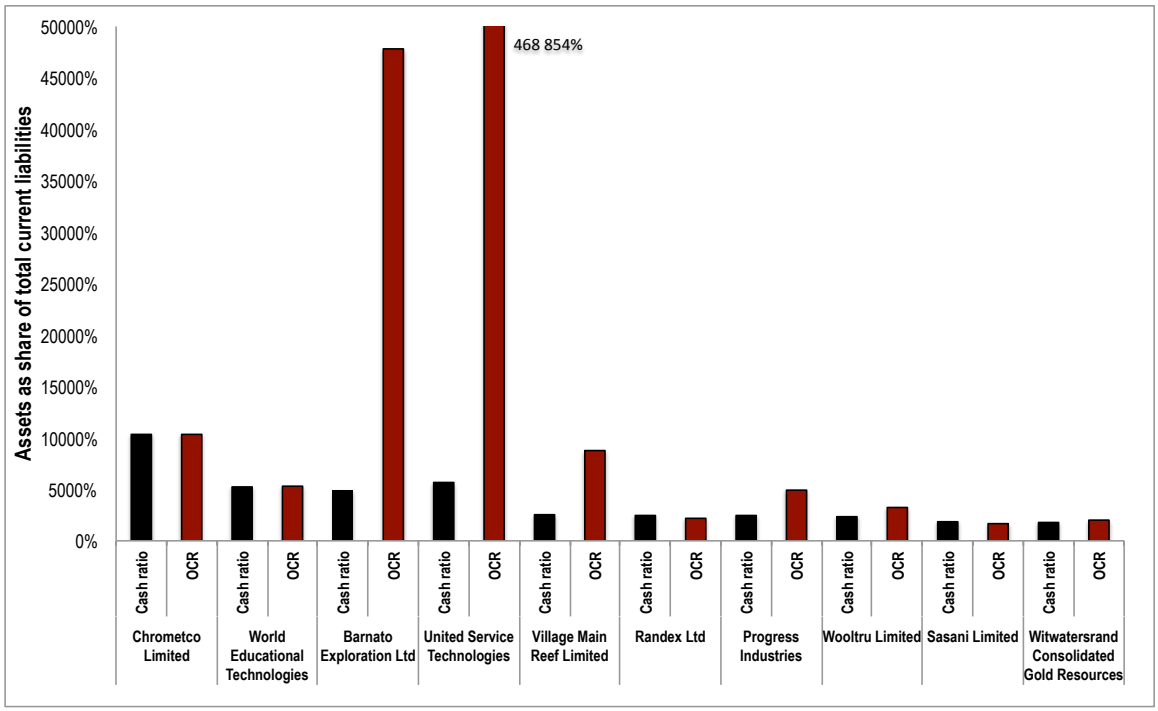
Mature companies – even if in their decline – will rarely go bankrupt quickly due to the size of their accumulated assets. Lacking a productive outlet, financial income is likely to increasingly dominate, demonstrating once again the close interconnectedness of real and financial activity in non-financial companies. The situation of Randex during the 1990s is another case in point. The company's mining rights became a purely financial asset, once mining operations ceased to be profitable. This development was strengthened by the fact that, for years, Randex had been acquiring shareholdings in mining companies instead of investing into its own mining operations. During the 1990s, it was decided that Randex would sell off its shareholdings in other South African mining companies. In the process Genbel Securities, a financial company, acquired Randex's remaining mining assets with the intention of finalising the assets sale. Consequently, Randex delisted from the JSE in May 1997.

Thus, this case once again illustrates how closely intertwined financial and real activity can be within non-financial companies. Originally a mining company, Randex increasingly transformed itself into a financial investment firm, receiving income only as dividends and interest payments, rather than from operations. Ultimately, the firms itself was reduced to a financial asset when it was acquired by a financial corporation, which wanted to reap capital gains from Randex's shareholdings.

The distinction between holding cash and cash equivalence and other financial instruments as liquid assets can be highlighted by the difference between the cash ratio and the *OCR* calculated for a firm. This has been done for all 129 companies surveyed. Tables 4.3. and 4.4. below illustrate the ratios for the top 20 strongly overcapitalised non-financial firms listed on the JSE. There are six

companies that have a noticeably higher *OCR* than cash ratio. These are Barnato Exploration Ltd, United Service Technologies, Village Main Reef Limited, Progress Industries, Fredev and Simmer and Jack Mines. For all of these companies the difference is made up by investment in other companies' listed and unlisted shares. Importantly, mining companies also hold liquidity for mine rehabilitation as liquid assets on their balance sheet. This raises their liquidity further, but is by no means the main source of overcapitalisation.

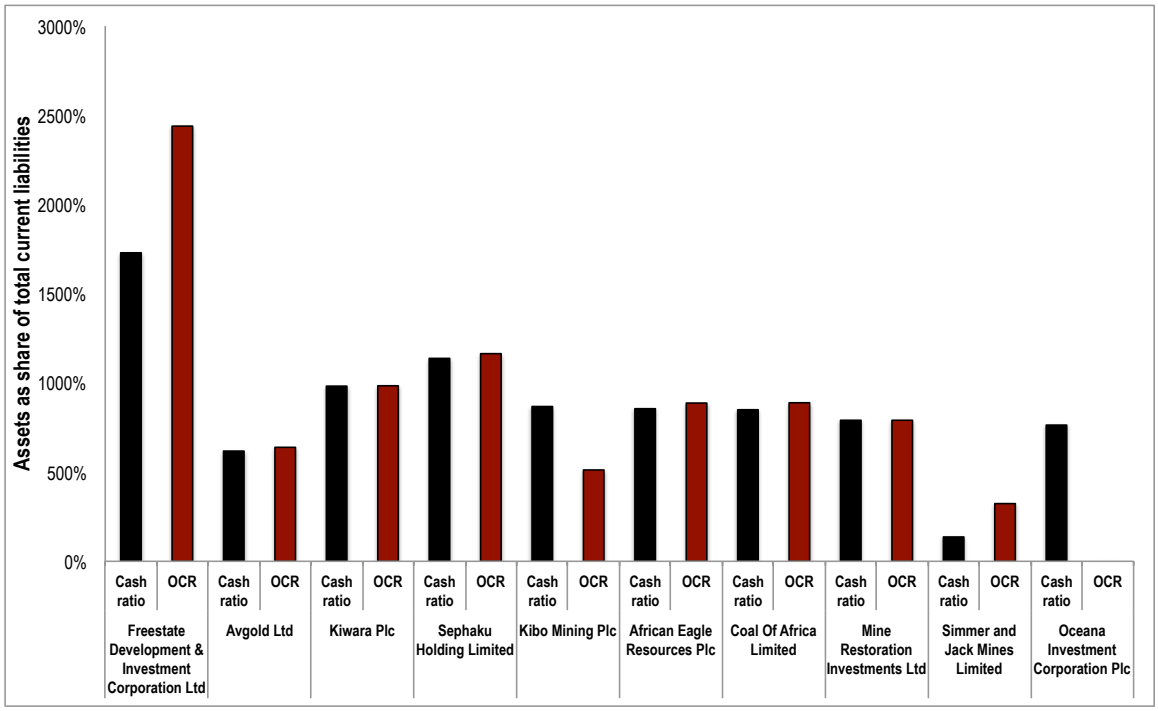
Figure 4.1. Cash ratios and OCRs for top 10 strongly overcapitalised non-financial firms



Source: Author's calculations based on annual reports retrieved from INET BFA, 2013.

For instance, for Simmer and Jack Mines the investment in their environmental fund was worth less than 7% of their shareholdings in associated companies during the years 2009 and 2010. Simmer and Jack Mines purchased and disposed of mining assets and subsidiaries regularly during the period 1994 to 2010, for which there is information. This distinction between holdings of cash and cash equivalents and (potentially) liquid holdings of financial assets is illustrated in the following survey of the 132 strongly overcapitalised companies when discussing the characteristics 'substantial financial investment' and 'mostly cash'.

Figure 4.2. Cash ratios and OCRs for top 11-20 strongly overcapitalised non-financial firms



Source: Author's calculations based on annual reports retrieved from INET BFA, 2013.

4.4.3. Findings from the full set of 132 company profiles

After this initial look at the motivations behind strongly overcapitalised non-financial firms' liquidity preferences – discussed in the previous two sections – let us turn to the full population of strongly overcapitalised firms. It has to be stressed that from a statistical perspective this thesis is not dealing with a representative sample since the database used provides a full population of JSE-listed firms (at least since 1994). This means that inferential statistics are not necessary, as the entire population can be observed and population parameters can be directly measured, rather than inferred from estimated sample statistics. Instead, descriptive statistics are used to describe the characteristics of strongly overcapitalised non-financial corporations.

Table 4.6. summarises qualitative findings for the subgroup of overcapitalised firms. The firm characteristics listed in the table correspond to columns 3 through 16 in Table 4.5. above. Among these 132 firms, four entities are in fact part of the

Remgro/Rembrandt group, which was mentioned as one of the major South African company groups in the previous chapter. As has been explained, South African companies used to have complex ownership structures, meaning nested layers of listed holding companies within one corporation, to avoid the reduction of control when issuing additional shares. Therefore, after a closer look at the 132, they can be consolidated to 129 companies, treating Rembrandt Beherende Beleg Bpk, Remgro Limited, Tegniese & Ind Beleggings Bpk and Tegniese Beleggingskorp Bpk as one entity.

Table 4.6. Important characteristics of strongly overcapitalised firms

Firm characteristics	Number of firms
Sector	
Mining	57
Industrial	21
Non-mining	52
Firm age	
Young	32
Established	92
Delisted	86
Cash flow from operations	
Yes	65
No	49
Irregular	12
Substantial financial assets	52
Mostly cash	31
M&A strategy	
Active	55
Joints ventures	4
Trade in subsidiaries	29
Exploration company	37
Diversified holding company	18
Foreign listing	33
Cash shell	13
Property & financial investment	20
Unbundling	10
Total	**129**

Source: Author's calculations based on INET BFA, 2013.

The data set contains 57 mining companies, 21 industrial companies and 52 non-mining companies. Since one firm transformed from a mining to a non-mining enterprise during its listed existence it was accounted for twice, bringing the total

count to 130 instead of 129. As observed throughout this chapter, mining companies play a driving role in the rising corporate liquidity preference among JSE-listed non-financial corporations, since almost half of all strongly overcapitalised non-financial companies are mining corporations.

A quarter (32 firms) of all strongly overcapitalised non-financial companies are young firms of less than 10 years of age. Two thirds of the companies (86 firms) identified as strongly overcapitalised non-financial firms are not listed on the JSE anymore. More than half (65 firms) of the companies in the data set have regular positive cash flow from operations. However, that also means that the other half (61 firms) either do not have positive cash flow from operations (49 firms) or have very irregular operational cash flow (12 firms). Perhaps unsurprisingly, a substantial number (32 companies) among this latter group is made up of young firms, which are likely to struggle initially in establishing profitable operations. It might therefore be reasonable to assume that their behaviour is driven by precaution.

However, a closer look reveals that among these 32 young companies without regular cash flow, 14 run exploration activities. This is surely connected to the global commodity price boom of the early 2000s, which made mining exploration more lucrative. As shown in the previous section, exploration necessitates large volumes of liquidity, due to its inherent uncertainty. Simultaneously, resource exploration possesses a speculative dimension, introducing a speculative motive to non-financial firms' liquidity preference. Therefore, it is important to note that more than one quarter of strongly overcapitalised non-financial businesses (37 firms) are engaged in resource exploration.

This result is certainly conditioned by South Africa's natural resource wealth and unlikely to be the case in advanced economies. However, similar situations are likely to be found in other resource-rich emerging economies with relatively sophisticated capital markets. This is the first major finding of the qualitative

case study analysis: in emerging markets such as South Africa resource-extracting corporations might drive a rising trend in corporate liquidity preferences. Structural changes within the mining industry during the 1990s (discussed in the previous section) appear to further favour this trend.

One can now ask what type of liquid assets these firms hold. Non-financial companies with mostly cash and cash equivalents, rather than substantial financial investments, on their balance sheets – of which there are 31 in the data set – appear to hold these as a type of insurance to cover future payment commitments. More than half of these firms (namely 17) actually do not have positive operational cash flow.

It also seems that a disproportionate share of young companies (11 out of 32 young companies) choose cash as their form of liquidity. Very few young companies substantially invest into financial instruments. Therefore, the majority of non-financial corporations that manage their liquidity through financial investment (48 out of 52) are in fact established companies. This might be the case because they have more experience in managing firm liquidity, and therefore branch out into instruments that have the potential not only to insure against unforeseen expenditure, but also to generate a positive cash flow. Hence, the second finding is that established companies are more likely to invest into financial instruments. This means as businesses in emerging economies mature they might develop an increasing interest in financial investment.

Furthermore, almost half of the non-financial firms in the data set (55 firms) follow an active mergers and acquisitions strategy in order to grow. In this sense, their liquidity preference is motivated by the need to finance potential company takeovers. This can be equated to Keynes's finance motive. Yet, an active mergers and acquisitions strategy can also take on speculative dimensions when subsidiary companies are traded with the intention of achieving capital gains. Some 20% of the non-financial companies in the data set actively sell subsidiary

companies. Therefore, the third finding – which was discussed in more detail in the previous section – is that some overcapitalised non-financial companies speculate on capital gains in productive assets. This point has been stressed by other authors before (Crotty, 2003). However, it is remarkable since there seems to be an explicit expectation in parts of the financialisation literature (see Demir, 2007) that financial investment by non-financial corporations will be speculative. In fact, it seems that fewer companies appear to follow a speculative motive with their liquidity holdings than some authors who are part of the financialisation debate seem to suggest.

For a relatively small share (13 firms) of the assessed companies overcapitalisation occurred in the process of selling off all their assets. This is the other side of an active mergers and acquisitions strategy, namely the perspective of the selling company. In many of these firms, overcapitalisation was a persistent phenomenon, which did not exclusively depend on their status as cash shell. The same is true for non-financial companies engaged in unbundling (10 firms), especially since half of them (5 firms) became cash shells in the process.

This author suggests that finance – and specifically overcapitalisation – can enable non-financial corporations to speculate in productive assets – such as mines, patents or subsidiary firms. By contrast, financial prudence can lead to situations in which non-financial companies hold on to financial investment out of precaution, reaping rentier income. At the extreme, if all other sources of income dry out, the non-financial business can become a pure rentier firm, surviving exclusively thanks to financial income. At that point, the firm might have the appearance – and the stock market listing – of a non-financial corporation, but effectively operates like a financial firm. Once again, it is noteworthy that there is no intention to undertake speculative financial investment on the part of the company. Hence, simple precaution can make a non-financial firm into a financial rentier. Only 20 non-financial firms have

amassed liquidity while having business interests in the FIRE sector, or with the intention to move into real estate investment. These are the sectors where speculative profit is typically located. Property and equity investments are activities in which profits tend to be based on asset price increases. Especially in the UK and US – but also in South Africa – markets for real estate have been inflating alongside capital markets over the past decades.

Finally, it should be stressed that overcapitalisation is not a side-product of a specific type of organisational structure, for example, of a diversified holding company with interest in several industries. Not all overcapitalised companies are diversified holding companies. Similarly, it is not the case that only firms with access to domestic financial markets, facing capital controls that regulate how they can withdraw funds from South Africa, have been affected. In fact a quarter of all strongly overcapitalised non-financial corporations possess a foreign stock exchange listing, and could therefore use firm-internal bookkeeping to transfer funds abroad if desired. The question how the heightened corporate liquidity preference affects the South African economy as a whole will be addressed in the following chapters (5-7) of this thesis, which deal with the macroeconomic perspective.

4.5. Summary and conclusion

This chapter addresses two questions that were formulated to guide the microeconomic analysis in this thesis: (1) What role do financial operations play in the dealings of non-financial businesses? And (3) Why has the liquidity preference of non-financial corporations increased in South Africa over the past decades? The missing question not addressed here (namely, (2) what type of non-financial companies does the analysis target) was answered in the previous chapter setting out the methodology of an alternative balance sheet approach, which can be best implemented for large listed corporations.

(1) The motive for holdings large volumes of liquid assets vary among the 132 examined cases[4]. Both precautionary considerations as well as speculative intentions are present among these non-financial firms. What the close study of financial processes within these non-financial firms shows is that the distinction between productive and speculative activity is often blurred. A major reason for non-financial corporations to hold large amounts of cash is the ability to acquire business interests, be they subsidiary company or, in the case of a resource-rich economy like South Africa, mines. These acquisitions can be made either with the intention of generating cash flow from operations, or to reap profits from value gains in the acquired business assets. Almost half (55) of all examined companies showed signs of speculation in subsidiary trading.

This type of activity is speculation in real rather than financial assets as much of the financialisation literature predicts, especially in the context of an emerging market like South Africa. Among those 132 companies, 101 hold considerable financial assets when accounting for liquid financial investment, rather than cash and cash equivalents. Thus, for 52 of these non-financial companies the OCR is twice as large as their cash ratio, indicating that they generate rentier income. The precautionary motive, in which financial assets are merely held to generate a complementary cash flow, can turn a firm into a financial investor and therefore rentier. Such cases illustrate that productive and financial operations are often closely intertwined. Established companies are more likely to diversify their liquidity holdings into financial investment, suggesting that non-financial corporations might turn to financial investment as they mature.

(2) Generally, the rising liquidity preference among South African listed non-financial corporations is greatly influenced by the country's specific geographic location and mineral endowments. Thus, much of financial dealings by non-financial business is undertaken among mining companies, the industry which

[4] When accounting for pyramid structures the group of firms shrinks to 129 companies.

has fundamentally moulded the economy since the early beginnings of capitalism in the territories that later became South Africa (see chapter 6 for a detailed historical overview). A change in financing patterns among the large mining-finance houses during the 1990s has resulted in a large number of mining exploration companies, which are forced to finance themselves outside of the mining-finance houses' structures.

As a consequence, these highly risky and speculative (even though potentially productive) business units have attempted to raise capital on the JSE. Large company groups like Anglo American could take advantage of economies of scale in their provision of liquidity to a large number of exploration projects, reducing the overall demand for liquidity. By contrast, those individual businesses are often small in scale and need to overcapitalise substantially to ensure their survival until exploration is successful and they can sell their mining right, or even until the mine development stage is completed.

Chapter V: Literature Review: The Role of Finance in the Macro Economy

To identify the interaction of non-financial firms' financial operations with the macro economy, this chapter will review the most salient theoretical contributions on the role of the financial system in the economy. The aim is to carve out economists' theoretical understanding of how financial markets and non-financial business interact on the aggregate level. While the first part of the thesis centred on the firm (that is, the micro level), the following analysis takes on the macroeconomic lens. Since the author has a Kaleckian view on the economy, micro and macro dynamics are believed to be closely interlinked.

Three concrete questions will guide this review: (1) What is the macroeconomic role of financial institutions? (2) What (or who) drives credit extension? And (3) how are non-financial companies as a whole positioned vis-à-vis financial institutions? The last question is one of agency or, if one wants, power: Who is the more powerful party in the interaction between financial intermediaries and non-financial businesses?

Since this chapter deals with macroeconomic considerations the issue of firm heterogeneity will inevitably be left aside for now. Accounting for small and medium-sized enterprises (SMEs) in this type of analysis is a worthwhile task for further research. The topic of SMEs will, however, be mentioned in the next two chapters, wherever it is essential for the analysis.

In mainstream analysis the functions of the actual financial system frequently appear to be defined negatively, against the benchmark of an imagined perfectly functioning financial system. Hence, an important focus of the mainstream review (in part 5.1.) will be on the role of finance in economic development and market failures in financial markets. Economic operations are allegedly hampered due to financial imperfections. Identifying which

operations exactly are understood to be impaired offers, by implication, a response to the questions about the role of financial institutions in the macro economy.

Another clarification is necessary at this point; namely, what is meant by 'finance'. In economic theory the term 'financial market' or 'financial system' is typically used in a generic way, referring to the most important financial institutions and structures in an economy. Often this seems to suggest that financial structures are relatively homogenous across countries. In the following the terms will be used in a broad sense embracing all financial actors and institutions, however, with a focus on the financial entities that most frequently interact with non-financial business. This emphasis stems from the belief (outlined at the beginning of chapter 1) that non-financial companies drive economic activity through their investment behaviour. The acknowledgement that financial structures differ significantly across economies is picked up as a central theme in the following chapter's discussion on the bank-based-market-based dichotomy.

The review presented here will show that finance has seemingly become increasingly important in mainstream economic theory. While financial structures and institutions were of no importance in marginalist thinking and the economic orthodoxy of the 1950s and '60s (discussed in part 5.1.1.), financial variables crept slowly into economic thinking, establishing a prominent role within development thinking by the 1980s (in part 5.1.2.). Finally, the rise of New Keynesian thought identified financial markets as common sources of economic friction (discussed in part 5.1.3.). Despite this theoretical evolution there has been no progress on how financial markets are believed to work (and modelled): the mainstream paradigm remains (for the most part) stuck with the loanable funds model.

In heterodox economic theory, finance plays an active role and money is endogenously created by banks.[1] The chapter will distinguish three heterodox traditions: the German-speaking one (part 5.2.1), the Keynesian and post-Keynesian one (part 5.2.2.) and the recent financialisation approaches (part 5.2.3.).

The German-language tradition is extremely rich in substance and variety, resulting in different answers to the question who drives the credit cycle and where agency is to be found. Importantly, from this tradition an active role for non-financial corporations can be deduced. This view contrasts with Keynes's ideas, where the agency is with the financial institutions, but is revived in parts of the post-Keynesian tradition (especially around Kalecki). Keynes's emphasis on the agency of financial institutions lives on in today's financialisation literature, where non-financial companies are mostly passive victims of changes in financial markets. As always, there are exceptions and the Regulationist school is an important one.

This chapter has a strong focus on the history of economic thought. Its findings are, however, not merely of historical interest. With respect to its understanding of the role and workings of financial markets, current mainstream economic thought appears caught up in some version of the loanable funds theory. Reviewing historical contributions in monetary economics can help move the debate beyond this ossified consensus, without having to reinvent existing theory. It is particularly striking how well-developed the theoretical grasp of credit was among German-language economic scholars of the late 19th and early 20th century. Hence, an important and original contribution of this thesis is the summary of contemporary and historical economic literature on the role of finance in the economy.

[1] While some branches of heterodox economics embrace the loanable funds theory, such as Austrian and neo-Austrian thought following von Mises, much of heterodox thought is built on the idea of endogenous money.

5.1. The role of finance in mainstream economic theory

The role of money and finance has changed over time in mainstream economic thought. While many of the classical economists treated money (and by extension, finance) as an unimportant 'veil', the mainstream position has shifted slowly towards emphasising the significance of the financial system in the preservation of wealth, intermediation of savings and, more recently, management of risk. Since the role that modern economic theory attributes to finance in the overall economy remains limited to financial intermediation between household-savers and firm-investors, along with information gathering, monitoring and risk management tasks, most of this thinking is stuck in the loanable funds framework.

5.1.1. The economic orthodoxy of the post-World War II era and its origins

After World War II, an economic consensus emerged which assigned only limited importance to financial variables. In fact, it tied in with the classical idea of money as a 'veil'. The concept of the veil of money, concealing real economic activity, can already be found in the writings of classical economists whose analysis focused on the (imagined) barter economy. A major representative of this orthodox consensus on the macro level is the Solow-Swan growth model. Over time, real balances, that is households' real stock of money, was introduced into macroeconomic models in a weak attempt to acknowledge the existence of money.

5.1.1.1. Money as a 'veil' in classical economic thought

Ricardo, for instance, put forward his famous principle of comparative advantage in such a framework. Another influential idea – supported by prominent classical economists like Ricardo and (albeit less strongly) Mill (Snowdon & Vane, 2005, Schumpeter & Schumpeter, 1986) – formulated for a

barter economy was Say's Law[2], which essentially states that supply creates its own demand in the market. Hence, if aggregate demand and aggregate supply are always equal, as suggested by Say's Law, money is simply a convenient medium of exchange that solves the well-known 'double coincident of wants' problem.

However, it was Walras who fundamentally shaped the view that finance is negligible by adopting a general equilibrium approach to money and finance (Schumpeter & Schumpeter, 1986). Walras treated money as numéraire, that is, as accounting unit in the tatônnement process, which is the procedure that gradually establishes the market-clearing price for all commodities, resulting in general equilibrium. Formally, it does not matter whether this numéraire is money or any other good, such as cigarettes, which sometimes do play the role of commodity money. Therefore, in the formalisation of his ideas Walras divided the prices of all goods by the numéraire, simplifying his mathematical problem while eliminating money from the equation. Walras's thought has been highly influential in 20th century economics, most notably in Arrow and Debreu's general equilibrium model and Lucas's real business cycle (Snowdon & Vane, 2005). Money or finance figures in neither of them.

The classical understanding of inflation also supports the view of money as a 'veil'. According to a simple version of the quantity theory of money (which nowadays is the one economics students are taught) any increase in the volume of money will translate into a proportional rise of the price level, if output remains unchanged, with the velocity of money assumed to be fixed. Under these assumptions, nominal prices do not matter because only relative (and therefore real) prices determine equilibrium.

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[2] In Say's words: 'A product is no sooner created, than it, from that instant, affords a market for other products to the full extent of its own value…the mere circumstance of the creation of one product immediately opens a vent for other products' (Say, 1834, p. 138).

5.1.1.2. The Solow-Swan growth model

Against this intellectual background, one of the most influential macroeconomic models of the 20th century was developed, completely abstracting from financial factors: the Solow-Swan growth model. The Solow-Swan (or neoclassical) growth model was the equilibrium response to Harrod's (Harrod, 1939) demonstration that the stability of growth in capitalist economies is on a knife-edge. The slightest deviation from the very narrow equilibrium path – determined by the savings rate, the capital to output ratio and population growth – results in ever-intensifying booms or busts.[3] This perception of inherent instability was at odds with the feeling of many economists during the 1950s that growth is steady most of the time and not 'a miraculous stroke of luck' (Solow, 1988).

The Solow-Swan model embodies neoclassical growth theory and the belief in the self-equilibrating power of capitalist economies. At its core the model has an aggregate production function where output per worker is determined by saving per head, which is assumed to automatically translate into capital per head. In steady state, the growth rate is determined by the population growth rate (assumed to be equivalent to the growth rate of the workforce) with unchanging income per worker. Output is some generic good, which can be used for consumption and production. Hence, economic units must be household-firms, allocating income per head between consumption and savings. There is no money and therefore no nominal prices in the basic model (see Solow, 1956).

While orthodox Keynesian thought, at that time, was more critical in its assessment of the economy's ability to run smoothly without government intervention, it did not give much more attention to financial institutions and transactions than its neoclassical counterpart. In fact, orthodox Keynesian

[3] A similar growth model was put forward by Domar.

growth models often used some version of the Solow-Swan framework (see Stein, 1970 for an overview of monetary growth models dominant during the 1950s and 60s).

A major point of criticism towards orthodox macro models was their excessive aggregation and simplification (Gurley & Shaw, 1960). Thus, John Gurley and Edward Shaw argued that the aggregation of economic sectors becomes a severe problem when money in the economy is not only outside money, meaning fiat money issued by the monetary authorities, but also (and potentially mainly) inside money issued by commercial banks against other parties' debt.

It is important to note here that the concept of inside money accepts commercial banks' ability to issue money *ex nihilo*, that is, the endogeneity of money. The idea that banks create money was present in economic theory (across schools of thought) until the 1960s (Chick, 2005). Thereafter, it was purged as it was incompatible with the orthodox monetarist conviction that the state alone determines the money supply.

Since inside money – and one should add financial instruments here – is someone's asset while simultaneously figuring as someone else's liability, gross rather than net (aggregated) positions are important in the macro economy. Otherwise, money and financial instruments are netted out on the aggregate balance sheet. Therefore, Gurley and Shaw (1960) advocated a prominent role for flow of funds and sectoral analyses, since they are the only tools that can reveal the importance of the financial sector.

Today this criticism appears very intuitive given large volumes of household debt matched by corporate savings in many advanced economies. Considering the aggregated balance sheet for the economy (or the private sector), this debt disappears because it is balanced by private assets. Nevertheless, households' large debt burden has had a profound impact on these advanced economies, reducing consumption expenditure while dampening economic growth. Gurley

and Shaw (1960) did not discuss the implications of changes in private-sector financial stocks (such as household debt) for real (rather than financial) economic activity. Their motivation seemed to be an appraisal of monetary policy, against the consensus of their times that fiscal policy should be the main policy tool. Significant household savings and indebtedness is a more recent phenomenon, which excuses this omission.

5.1.1.3. Introducing real balances

In the absence of a disaggregated approach, money and monetary phenomena could only be introduced into the mainstream Solow-Swan model in a very clumsy way, namely through the concept of real balances. Money balances were assumed to be held by household-firms in the model. If prices are flexible and markets perfectly competitive, if inflation expectations are rational, if government purchases do not alter relative demand for consumption and investment, and without the money illusion, money would be neutral in the sense that there is no impact on real variables from inflation or deflation (Gurley & Shaw, 1960).

In the neoclassical model with money neutrality, issuance of additional money by the government results in a rising price level, which erodes real balances held in the economy. Consequently, the real balances of households and firms fall below desired levels, and households demand additional money, restoring their equilibrium levels of real balances. The extraordinary result here is that in the face of inflation households will want to hold more nominal money than before the deterioration of their currency's purchasing power.

In contrast, in monetary growth models commonly discussed during the 1960s (Stein, 1970), money is mostly not neutral because the very restrictive conditions outlined above do not hold. Thus, with rising inflation the price level would grow, eroding households' real balances, which would result in reduced consumption expenditure because of deteriorating household wealth. Conversely, deflation would increase household wealth, resulting in higher

consumption. This is the income effect of changing real balances. These results are weakened if money present in the economy is mainly inside money, since any positive wealth effect here also generates a corresponding negative effect onto the debtor (Stein, 1970).

Considering non-financial firms in the model, their investment is allocated between capital goods and real balances. Hence, if money balances are growing in real value, firms might have an incentive to shift investment from capital to financial paper (such as government bonds, for example, as suggested by James Tobin, 1965). This is the substitution effect. In Keynesian monetary growth models of the 1950s and 60s, the substitution effect played an important role, demonstrating that high interest rates can be detrimental to economic growth since they can subdue capital investment (Tobin, 1965). By contrast, in neoclassical and monetarist models the substitution effect is offset by a strong income effect, resulting in an overall positive growth impact of rising real balances.

The introduction of real balances in the monetary growth model appears more aimed at appraising the importance of monetary policy than at the significance of the financial system as a whole. Even Gurley and Shaw's critical work (Gurley & Shaw, 1960) primarily demonstrates that money matters, because, if inside and outside money co-exist, monetary policy can change the financial portfolios of firms and households (which are assumed to hold outside money alongside financial paper). This upsets the initial equilibrium because the relationship between outside and inside money might have changed. In this situation, households would strive to re-establish their desired financial portfolios (and the initial ratio of money to financial paper), triggering inflationary or deflationary dynamics for the relevant financial asset classes. Importantly, Gurley and Shaw (1960) argued that price rigidities or other market imperfections are not necessary to show these results.

5.1.2. The 'financial repression' hypothesis and its critique

5.1.2.1. Shaw's and McKinnon's work

Shaw's (1973) work laid the foundation for the 'financial repression' hypothesis, which is prominently associated with his and McKinnon's (1973) name. The 'financial repression' hypothesis states that, contrary to Keynesian orthodoxy, it is not too high but too low interest rates that dampen capital investment. Their hypothesis was developed in the context of developing economies, which were assumed to have fragmented and underdeveloped financial systems.

Shaw (1973) and McKinnon (1973) explicitly attacked Keynes's call for the euthanasia of the rentier (Keynes, 1936) and Tobin's warning (Tobin, 1965) that physical capital competes with financial instruments that serve as store of value, that is the substitution effect explained above. Crucially, government intervention into the financial sector through interest rate ceilings and sectoral credit allocations arguably distorted the price mechanism, allocating investment expenditure into the wrong projects and resulting in (too much) inefficient investment.

While Shaw (1973) stressed the importance of financial institutions in pooling surplus household savings and channelling them to investing firms, McKinnon believed that in developing economies economic units ('household-firms') financed investment internally. In both versions of the 'financial repression' hypothesis the financial sector has the role of mobilising savings for investment purposes, thereby accelerating economic growth. The difference is that in Shaw's model higher deposit rates increase households' savings, which are subsequently used to extend credit to investing companies. This is the debt-intermediation view of finance according to Shaw (1973). In McKinnon's version household-firms also increase saving which they can then use themselves for future investment. While Shaw suggested that higher interest rates would increase economic growth due to rising investment volumes, in

McKinnon's view accelerated growth was not merely achieved through larger investment volumes but through increased efficiency of investment projects.

According to McKinnon, household-firms often invest in inefficient projects because they lack alternative means of saving. In consequence, higher long-term profits might be foregone because firms cannot afford to accumulate sufficient finance necessary for technological upgrading. Instead these firms keep on expanding existing (backward and inefficient) production capacity out.

Additionally, a low interest rate might result in capital-intensive production in developing economies, which tend to have an abundant labour force. The result is the adoption of inadequate production techniques and high unemployment due to distorted interest rates. Therefore, McKinnon stressed the impact of higher interest rates on economic efficiency. This is sometimes also called the total factor productivity channel (Ang, 2008).

In this sense, McKinnon was mostly preoccupied with the preservation of wealth as the main function of the financial system in the economy. Facilitating investment becomes a mere consequence of wealth preservation, just like investment appears a mere consequence of savings in much of mainstream economic thought.

Shaw's view on finance in the macro economy has become today's standard textbook approach: the simplest understanding of the role of financial institutions that is offered in mainstream economic textbooks (Mishkin & Eakins, 2012) is that of financial intermediaries. In the macro economy financial institutions – be they financial markets or banks – intermediate between households and non-financial firms. While the former are believed to generate a financial surplus, the latter are characterised as deficit sector, not capable of retaining sufficient earnings to finance all desired corporate investment. Financial institutions then simply channel surplus savings towards the deficit sector.

5.1.2.2. McKinnon-Shaw financial development models and policy recommendations

Being familiar with the complex and fragmented nature of developing economies, neither Shaw nor McKinnon formalised their views on finance and development. A range of formal models was subsequently developed by other economists and became known as McKinnon-Shaw financial development models (see mainly Kapur, Mathieson, Gablis and Fry as discussed by Fry, 1988). In the process, the core of the 'financial repression' hypothesis seemed to be reduced to a loanable funds argument (see especially figure IV.1 in Shaw, 1973, p. 82 and figure 1.4. in Fry, 1988, p. 16). In this framework, supply and demand of loanable funds, meaning the supply of savings and demand for credit, yield an equilibrium interest rate. Interest rate ceilings, as adopted by many developing economies after de-colonisation in their efforts to promote industrial investment, would impede the efficient allocation of loanable funds through the price mechanism, if set below the equilibrium interest rate.

The loanable funds theory does, at least on the face of it, appear to be the dominant financial framework in much of development economics. The founding father of the discipline – Lewis (1954) – stressed the importance of increasing saving rates in developing societies in order to boost investment and push development. The two-gap model, which is based on a simple rearrangement of the national accounting identity, stresses the foreign exchange and the saving gaps as constraints to growth and development. The Harrod-Domar model, in its simplified policy application, has been used to argue that higher saving rates are required to increase growth. Hence, there is a strong conviction in 'old' development economics that it is savings that cause investment. Lewis (1954), in fact, explicitly rejected Keynesian (alongside neoclassical) thought as analytical framework for developing countries. Keynes, so Lewis argued, assumed the abundance of capital and land, which would be an incorrect characterisation for developing economies.

Based on the simplified McKinnon-Shaw model, the consensus emerged that low real interest rates were the actual impediment to growth in developing countries, while 'investment opportunities were abound here' (Fry, 1988, p. 19). This view became especially popular over the 1970s when high inflation rates in many advanced and developing economies resulted in low real interest rates given fixed nominal interest rate caps. This was believed to dampen investment and growth because low real interest would discourage savings. Interestingly, even the proponents of the 'financial repression' argument had to admit that empirical studies showed a very weak response of saving rates to changes in interest rates (Shaw, 1973, Fry, 1988). Nevertheless, it was suggested that financial repression contributed to the fragmentation of financial markets in developing economies, reducing household saving in general (McKinnon, 1973).

The prescribed policy response was financial liberalisation. Lifting repressive government policies and allowing market forces to mobilise and allocate credit would allegedly result in higher growth rates due to strengthened financial intermediation (à la Shaw) and/or better utilisation of savings (à la McKinnon). This process of financial development is generally called financial deepening, meaning the accelerated growth of money and credit volumes in relation to GDP growth. To summarise the argument in Shaw's words:

> 'The essence of financial liberalization and deepening is release of real rates of interest to disclose the scarcity of savings and to stimulate saving, to raise accessible rates of return on investment, and to discriminate more effectively between investments' (Shaw, 1973, p. 77).

5.1.2.3. Criticisms of the 'financial repression' hypothesis

The McKinnon-Shaw type financial development models were mainly criticised from two camps. On the one hand, so-called new or neo-structuralists argued that after financial liberalisation growth in formal credit could come at the cost of vanishing informal sector credit, shrinking the total volume of external finance available for investment purposes (van Wijnbergen, 1983). On the other

hand, the New Keynesian school warned that asymmetric information and other market failures could result in credit rationing regardless of legislated interest rate ceilings (Stiglitz & Weiss, 1981). The latter view is prevalent in arguments on the role of finance in development until today.

Both criticisms did not break with the fundamental assumption that financial markets and institutions operate in a loanable funds framework. Hence, the most prominent role assigned to finance in the macro economy remained one of financial (or, using Shaw's terminology, debt) intermediation, in which banks and the capital market channel surplus funds, believed to be saved by households, towards non-financial firms investing in production. The current mainstream view is essentially the same, complicated by the monitoring and risk management duties of financial intermediaries.

The credit rationing argument was most influentially put forward by Stiglitz & Weiss (1981). In a formal principle-agent model the authors showed that credit volumes might not be constrained by 'repressive' government intervention in the financial markets, but by limited information combined with risk. If the quality of borrowers cannot be observed, a rise in interest rates in response to excess demand for credit results in adverse selection, meaning that borrowers with safe investment projects will withdraw leaving only risky clients in the credit market:

> 'Increasing interest rates or increasing collateral requirements could increase the riskiness of the bank's loan portfolio, either by discouraging safer investors, or by inducing borrowers to invest in riskier projects, and therefore could decrease the bank's profits' (Stiglitz & Weiss, 1981, p. 408).

Hence, increasing interest rates do not linearly correspond to rising bank profits. Stiglitz & Weiss (1981) argued that the bank's expected returns as function of the interest rate charged are in fact an inverted U-curve. This depends on the assumption that higher interest rates will increasingly attract more risky (and less risk-averse) borrowers, for whom profits will be large in the case of success. Higher (potential) profitability, however, comes at the cost

of a higher probability of failure. Thus, banks by themselves might ration credit at an interest rate below the market-clearing one (rather than being forced to ration it through nominal interest rate caps) in order to avoid adverse selection.

Once again, the volume of credit available to the economy is assumed to be determined by the stock of loanable funds. More generally, the proposed model is a mere extension of the loanable funds model because it simply introduces one market imperfection (namely risk) into the framework. Hence, without risk under perfect information the interest rate mechanism could in fact allocate savings efficiently to the most profitable investment projects, as suggested by Shaw and McKinnon.

The imperfect information view on financial intermediation, therefore, holds on to the loanable funds framework. It is implied that loanable funds are exogenously given to the bank and cannot be influenced directly. Stiglitz & Weiss (1981) state that an increase in the supply of loanable funds would raise the volume of available credit at the given interest rate. In their influential paper it remains unclear how the supply can be increased. Typically, the presumption is that either monetary policy (raising money supply) or household behaviour (raising the saving rate) can increase the supply of loanable funds.

5.1.3. The emergence of the current consensus

5.1.3.1. Financial deepening revived

The current consensus on the role of finance in the economy is shaped by the idea of asymmetric information. However, the legacy of 'financial repression' and especially the policy recommendations linked to the hypothesis also figure. This is particularly clear in the finance-development nexus, which is discussed next.

Levine & King's work in the 1990s revived decades of theoretical debate around financial deepening, and sparked a large econometric literature on the impact of

financial development on growth. The dominant policy recommendation of this research was in the spirit of the 'financial repression' hypothesis, advocating the liberalisation of financial markets as a growth-enhancing policy. This was in line with the shift in development thinking towards neoliberal Washington Consensus policies advocating no (and with the post-Washington Consensus, limited) state intervention during the 1980s.

The revived financial deepening story was complicated by the introduction of imperfect information and other market frictions, such as transaction costs. In fact, it has been argued that the existence of these imperfections is the origin of financial institutions (see Santomero, 1984) since under perfect information and with costless contract enforcement individuals could arguably lend directly among themselves. Given market imperfections financial institutions are thought to have the following functions in the economy (Levine, 2005):

1. Produce information and allocate scarce funds;
2. Monitor investment and exert control over corporations;
3. Handle risk;
4. Mobilise savings;
5. Facilitate trade of goods and services;

Fundamentally, the financial system is still perceived as an intermediary between households who save and non-financial firms who invest. Therefore, it is meant to mobilise savings (function 4), which it then allocates efficiently through the price mechanism, using information that financial institutions collect about borrowers (function 1). This is necessary because the interest rate itself cannot identify the most profitable investment projects given risk (function 3). Due to moral hazard information generation is not only an *ex ante* job, but has to be carried out throughout the investment process (function 2).

Function 3 was upgraded in importance in the late 1990s/early 2000s (see Allen & Santomero, 1997 and Allen & Santomero, 2001) because the imperfect

information story as rational for financial intermediation was losing credibility. Due to improvements in information technology and advances in financial deregulation, transaction costs and information asymmetries in financial intermediation were reduced since the 1970s (Allen & Santomero, 2001). During the same period the size and profits of the financial industry increased. If market frictions were the main justification for financial institutions to exist, these developments were puzzling. The handling of risk (reducing and smoothing it) was therefore put at the centre of the raison d'être of the finance industry.

This more complex perspective on finance rests – despite the complications – on the loanable funds model of financial institutions, since credit rationing is defined in relation to a riskless loanable funds market as explained above.[4] Given these five functions, the unrestrained activity of financial markets and financial deepening in Shaw and McKinnon's spirit were long seen as guarantors of growth (see von Pischke, 1991 and von Pischke, 1997). The five functions of the financial system listed above are regularly cited as the consensus view on how modern financial markets work and why they are important (see Stiglitz, 1998; Trichet, 2010; and Lapavitsas, 2013).

5.1.3.2. Today's consensus in historical perspective

Therefore, the loanable funds-cum-imperfect information view on finance is the current consensus in economic thinking and policy. Interestingly, within the mainstream discourse Keynesian economic teaching is often seen as the reason why finance has not been attributed a more prominent role in (macroeconomic) models until recently. The cautious attitude of Keynesian economists such as

[4] The understanding of financial institutions such as banks as mere intermediaries for loanable funds has clearly not changed. Allen & Santomero (2001, p. 273), for instance, stress that: '[a]t the center, of course, financial systems perform the function of reallocating the resources of economic units with surplus funds (savers) to economic units with funding needs (borrowers)'.

Tobin towards finance has been interpreted as a neglect of financial structures in Keynesian thought in general (see von Pischke, 1997; Stiglitz, 1998). While the criticism is valid for some parts of Keynesian teaching (most notably so-called orthodox Keynesianism, which was mainstream economic thinking during the 1950s and 1960s), it would be incorrect to attribute it to other strands of Keynesianism (especially the post-Keynesian school). Joan Robinson - widely regarded to be the mother of post-Keynesian thinking – is often attacked fiercely for allegedly diminishing the role of finance.

In the mainstream discourse, Robinson's work on finance has often been reduced to the oft-quoted statement that 'where enterprise leads, finance follows' (Robinson, 1954, p. 86). This remark was stylised into 'demand-following' versus 'supply-leading' finance by Patrick (1984[1966]) (see also Arestis, Nissanke, & Stein, 2005). A heated debate on whether finance was secondary to development was triggered.

A careful reading of Robinson's essay 'Generalizing the General Theory' (Robinson, 1954), which contains the controversial phrase, shows that she did not intend to diminish the role of financial structures in the economy, and even less so in economic development. Robinson stressed that finance might well be a constraint on growth. However, financial and more general impediments to entrepreneurial activity usually coincide. Hence, during economic downswings both financing opportunities as well as entrepreneurial energy vanish, since aggregate demand is dampened.

Hence, Robinson's fault lay merely in expressing her doubts that finance is a major bottleneck for growth in advanced economies. This unleashed a vehement reaction by mainstream development thinkers of her time. The clash between the post-Keynesian and the mainstream view on financial development originates from their fundamentally different understanding of the savings-investment relationship. While savings are a precondition for

investment in neoclassical and other mainstream thought, they are, to the contrary, the consequence of investment for post-Keynesians. This is particularly visible in Kalecki's work on financing development, as will be discussed in the following section.

Robinson's argument is attacked today and, it seems, increasingly misconstrued. Citing the phrase 'where enterprise leads, finance follows' Trichet (2010), at the time the head of the European Central Bank, attributed the concept of money as a 'veil' to her. This reading of Robinson's work by a mainstream economist is especially surprising, as the loanable funds-cum-imperfect information view is itself strongly reductionist with respect to finance. Finance only appears to play a prominent role during economic downswings and in economically less advanced societies. Over the business cycle financial institutions and structures presumably transmit and amplify exogenous shocks, causing swings in economic activity (see Gertler, 1988 and Bernanke, Gertler, & Gilchrist, 1999). Similarly, the fragmentation of financial markets in developing economies is believed to be a sign and an impediment to growth and development (von Pischke, 1991). Much less is said about the role of the financial system in generating these shocks (somewhat by definition, since they are exogenous).

The understanding of financial institutions in developing economies also appears incomplete. While developing economies are often lazily classified as financially backward and therefore underdeveloped, there is ample evidence that formal and informal structures interact, feeding off each other, rather than informal finance being a mere sign of backwardness (see, for instance, Mahdi, forthcoming). Without a positive definition of what financial institutions do (beyond collecting information to avoid market failures) our ability to understand these interactions is limited.

Hence, even though it is repeatedly stressed that financial markets are unique in the sense that they do not work like any other market (see Stiglitz, 1998) it is never quite clear what constitutes this uniqueness, and what the role of the financial system is apart from taking care of market frictions. This is particularly the case since financial markets and transactions are typically modelled like any other principle-agent problem. While Stiglitz (1998) stressed the specificities of financial markets he failed to spell out the specificities, emphasising at the same time that a wide range of economic activities (from agricultural sharecropping to employment) can be understood as principle-agent problems (Stiglitz & Weiss, 1981). Thus, how can financial relationships be unique while at the same time methodologically being treated no different from most other economic phenomena? This does appear a difficult to reconcile contradiction.

5.1.3.3. Mainstream finance theory after the financial crisis

Since the causes of the exogenous shocks that trigger business cycle swings according to much of mainstream theory often remain unexplored (as do financial markets in developing economies) finance still can be easily reduced to a 'veil'. Financial structures then are only important during economically exceptional times, such as the global financial crisis, and might even then be reduced to exogenous (and by implication inexplicable) shocks (see, for example, Ohanian, 2010).

Similarly, this reductionist view of financial structures can result in the simplistic argument that increased financial deepening will almost automatically contribute to accelerated economic growth and development (see von Pischke, 1991). Despite frequent financial crises in developing and emerging economies particularly during the 1990s and 2000s, this was in fact the dominant view among mainstream economists and policy makers until the financial crisis of 2007-09. Of course, there were some dissenters (see, for

instance, Ram, 1999; Easterly, Islam, & Stiglitz, 2001; Arestis, Demetriades, Fattouh, & Mouratidis, 2002) and empirical work supporting this view was plagued by endogeneity and other technical problems (Ang, 2008), but the argument that financial development was good for growth was dominant. It took the global financial crisis (which unlike previous crises mainly affected advanced economies) for a major rethinking.

Since then a new consensus has emerged, which views the interaction between financial sector deepening and development as complex and not always supportive of growth (Stiglitz & Ocampo, 2008). In fact, it was suggested that 'too much finance' (Arcand, Berkes, & Panizza, 2012, p. 1) could be bad for growth, meaning that financial deepening after a certain threshold can slow down growth (Shen & Lee, 2006; Cecchetti & Kharroubi, 2012). Given the role that household debt and leverage of financial companies had played in the outbreak and propagation of the 2007-09 financial crisis any other consensus would have been difficult to attain.

This reorientation of mainstream thought towards a more critical stance on finance appears to mainly revive Tobin-type concerns that financial activity diverts limited financial funds from productive and efficient use, resulting in a misallocation of funds. Cecchetti & Kharroubi (2012, 2015) of the Bank for International Settlement (BIS) argue that the financial sector might have a detrimental impact on the economy, since it not only drains financial funds from investment opportunities, but, once it attains a certain size, also draws talent and skills from employment in other sectors of an economy. In this way a bloated financial industry can reduce productivity and economic growth.

The idea of shiftability of a limited stock of loanable funds appears to resonate in this argument. Hence, we remain stuck in the loanable funds framework. In consequence, much of mainstream economic analysis does not assess the type or purpose of credit, but instead attempts to identify a numerical threshold

above which credit extension might become damaging to growth. The threshold has been put at around 80-100% of private credit to GDP (Cecchetti & Kharroubi, 2012). Numerical thresholds only appear to make sense if the stock of something cannot be rapidly expanded. This leads us to the role of financial markets in heterodox thought, which will be discussed in the next section, where money and credit is understood to be endogenous to the financial system and, thus, not strictly limited in volume. Here, the role of finance in the economy is seen more critically.

Before this chapter turns to heterodox economic theory, one remark must be added here. Maybe surprisingly to some, the New Neoclassical Consensus, which was the dominant monetary theory framework until the financial crisis (Woodford, 2003) and potentially beyond, has not been discussed here explicitly, yet. This has the simple reason that the framework has little to say about the interaction between the financial sector and non-financial firms. The focus instead is on the activities of the central bank and how it can maintain price stability.

However, as documented in this section, the global financial crisis has induced substantial dynamism into the mainstream discussion on finance with critical voices increasingly being heard. A recent working paper by the Bank of England's head of research, Kumhof, calls the dominant view that banks are merely financial intermediaries into question (Jakab & Kumhof, 2015). The paper embraces the endogenous money approach, even citing important heterodox economists whose work was based on the premise of endogenous money: namely Moore, Graziani and Minsky. Whether the economic mainstream is on a way to open up to more critical economic thinking remains to be seen.

Before turning to the heterodox take on the role of finance in the economy in the following section, the three questions posed at the beginning of this chapter

should be answered for orthodox economic thinking in way of summary: (1) what is the role of finance in the economy? (2) What (or who) drives credit extension? And (3) Where is the agency (power) in the relationship between finance and non-financial business?

Three (somewhat) distinct strands of mainstream economics have been identified as they developed over the years: (1) the post-World War II orthodoxy (which refers to neoclassical and orthodox Keynesian thought), (2) the 'financial repression' view and (3) the current consensus, which is heavily influenced by New Keynesian ideas. Table 5.1. provides of answers to the three questions by sub-strand of mainstream economic thought.

Table 5.1. Summary of macro perspective on finance, mainstream economics

	Macroeconomic role of financial institutions	Driving force behind credit extension	Agency in finance-business relationship
Mainstream economics			
Post-World War II orthodoxy	Wealth preservation, financial intermediation	Household saving	n/a
Financial repression hypothesis	Wealth preservation, financial intermediation	Household saving	n/a
New Keynesian models/ current consensus	Wealth preservation, financial intermediation & risk management	Household saving	n/a

Notably, ideas on the role of finance in the economy have evolved over time, but the role of finance remains limited to an intermediary providing a wealth preserving service to households and credit to investing non-financial firms. The function of risk management (necessitated by asymmetric information and other market frictions) is the main addition to financial institutions' role. However, overall, the financial sector merely carries out the role it is assigned by market forces (that is competition), while non-financial business is all together reactive. If competition is inhibited or some other form of market friction exists, financial institutions are prevented from taking on their role fully, resulting in market failures (including crises).

Crucially, in the orthodox framework, it is savings that determine investment. Hence, firms might intend to invest but are at the mercy of the available credit in the economy for investment expenditure beyond internal financing. Ultimately, it is households' decisions to save that drive credit extension in this framework. Therefore, there is little consideration of agency (outside of corporate control imposed by equity markets, for instance) in the finance-(non-financial) business relationship.

5.2. Financial markets in heterodox economic theory

This section is organised around two economic thinkers that until today exert the most prominent influence onto heterodox economics: Marx and Keynes (sub-sections 5.2.1. and 5.2.2.).[5] Consequently, in this section the literature review is split into continental European contributions starting with Marx and stretching up to Schumpeter, and a subsequent discussion of Keynes's understanding of the role of finance in the economy and those economists influenced by him.

The distinction between these two parts is not always clear-cut since some important writers typically identified as post-Keynesians have been impacted by so-called German ideas. The influence of Schumpeter on Minsky, who was his PhD student, is one example. Another is Kalecki's (albeit limited) work on finance, which arguably follows a German tradition, identifying firms as drivers behind credit extension rather than banks, which is where Keynes put his emphasis (Toporowski, 2012). More current developments – in both, the Marxist and post-Keynesian literature – are discussed in the third sub-section (part 5.2.3.). This will cover the most important contributions to the financialisation debate, which provides insights on the role of finance in the economy.

[5] Keynes reportedly had very little knowledge of the writings by his German-speaking contemporaries (Garvy, 1975) and also 'never managed to read Marx' (Robinson, 1973, p. ix).

5.2.1. Marx and 'German' economic thought on finance

This section reviews continental European finance theory, starting with Marx and his followers, covering so-called German monetary theory from the turn of the 19th century (see Ellis, 1934) and stretching up to Schumpeter's work. Given how fruitful financial theorising was during this period, the following review will only focus on the most interesting theoretical contributions, which can provide answers to the three questions outlined at the beginning of this chapter.

5.2.1.1. Marx's and Marxist thought on finance

Marx's thinking is a deliberately chosen starting point since he was the first to analyse the function of credit in the capitalist economy, explicitly distinguishing between capitalist credit and pre-capitalist forms of lending, such as usury and mercantile credit. However, the thrust of Marx's analysis of capitalist economies was formulated before important institutional changes in the financial markets of continental Europe (such as the wide-spread emergence of the joint stock company) had taken place.[6]

Marx never put forward a complete theory of credit (de Brunhoff, 1976). His writings on the capitalist financial system were merely a collection of notes at the point of his death in 1883, painstakingly assembled into volume III of *Das Kapital* by Engels and published in 1894. Therefore, 'Marx's analyses on such points as the banking system […] are more stimuli to thought than constituent parts of a complete theory' (de Brunhoff, 1976, p. 73). Nevertheless, de Brunhoff contended that the manner in which Marx left out credit from his analysis in volume I and II of *Das Kapital* implicitly reveals his understanding of credit (de Brunhoff, 1976).

For Marx, credit (in the capitalist economy) existed mainly in relation to production. This manifested itself in the view that interest was not a reward for

[6] According to Friedrich Engels (Marx & Engels, 1996[1894]) Marx's thoughts on the role of finance in the capitalist system did not majorly develop after 1856.

abstinence from consumption or the return on capital goods, but rather a mechanism to distribute surplus value among capitalists, that is, mainly between industrial and financial capitalists. Hence, the dominant form of capitalist activity for Marx was production, since it was the only activity which could generate surplus value through the exploitation of labour. In the course of production, capitalist credit would be necessary to bring about the equalisation of the profit rate across the economy, to reduce the cost of circulation and also to allow for large-scale production embodied in joint stock companies (Marx & Engels, 1996[1894], chapter 27).

Historically, Marx conducted his analysis in a time when most bank credit was extended to finance circulating capital (Kowalik, 2012; Argitis, Evans, Michell, & Toporowski, 2014). Since stock exchanges and limited liability companies only gained importance in most European countries towards the latter half of the 19th century (Kindleberger, 1984), the element of long-term capital markets in Marx's analysis had to be developed subsequently. This was chiefly done by Hilferding (Hilferding, 1947[1910]).

In Marx's writings, the banking sector pools idle money in the economy and mainly advances it to the industrial capitalists who use it to finance production. Banks, however, are not mere intermediaries but there is an element of credit creation. Thus, Marx's thought – importantly, following the English Banking School of Tooke and Fullarton (Argitis et al., 2014) – can be linked to the endogenous money theory. The ability of the financial system to create credit contributes to business cycles, providing cheap credit in the early phases of economic expansion, and tightening alongside rising labour and input costs during the boom. The recession is brought about either through a rise in interest rates, or through eroding net profits as wage and input costs rise, leaving capitalists unable to meet their payment commitments (Argitis et al., 2014). In summary, for Marx – as far as one can interpret his views on the financial system – credit is driven by industrial capitalists and their production needs.

Hilferding importantly advanced Marx's writings on finance, so much so that his *Finance Capital* (Hilferding, 1947[1910]) is sometimes labelled as volume IV of *Das Kapital* (Argitis et al., 2014). Crucially, Hilferding closely followed Marx's thought by highlighting the origin of credit in production. He stressed that credit arrangements first emerged where capitalists granted each other trade credit. Hilferding recognised that the importance of more sophisticated banks and capital markets lay in their ability to provide long-term capital for the financing of investment by non-financial companies (Kowalik, 2012). Here, stock markets and banks can smooth economic activity because they return idle capital, or hoards, into the circular flow of the economy, by making it available to other industrial capitalists. As stressed in chapter 2, hoards in Marx's analysis were both the inherent by-product of capitalist production, and also a potential symptom of crisis.

For Hilferding, the financial system could potentially have a growth-enhancing and stabilising effect on the economy. Companies could achieve a much larger scale of production much quicker when raising capital in equity markets, rather than relying on gradual and slow accumulation by individual capitalists. The emergence of the joint stock company during the 19th century served exactly this purpose.[7] Additionally, large German banks (increasingly intertwined with German industry) were believed to stabilise economic activity because they pushed for cartelisation.

Despite these important roles that banks played in Germany at the time, and in Hilferding's understanding of capitalist development, he saw the driving force behind credit in production. Thus, in chapter 4 of *Finance Capital*, Hilferding stated that the quantity of money advanced (including credit) is determined by

[7] Industrial capitalists in countries like Germany, in those days industrially lagging behind the UK, could catch up, establishing internationally competitive concerns particularly in heavy industry sectors that required large capital investment (Chandler, 1994).

the price of commodities that have to be purchased for the production process. Production drives credit in Hilferding's writings, which is little surprising for the work of a Marxist thinker. This becomes clear in his explanation of inflation.

The Marxist writer who is most eminently linked to early business cycle analysis is Tugan-Baranowsky[8] (Mitchell, 1927). Since he himself assigned an important role to the financial markets in his theory of cycle, it is worth reviewing his work. Tugan-Baranowsky's book *Studien zur Theorie und Geschichte der Handelskrisen in England* (*The History and Theory of Trade Cycles in England*, published in German in 1901) vehemently argued against the under-consumptionist argument of his time that shrinking wages undermine capitalist activity, resulting in crisis. Using Marx's schemes of reproduction he showed that in fact capitalists' profits are independent of workers' consumption as long as investment spending is forthcoming.[9]

Thus, according to Tugan-Baranowsky (1901) crises are the result of disproportional investment and production in the two departments – the capital goods and the consumption goods department. Therefore, overproduction of goods is never overproduction in an absolute sense, but only makes sense in relative terms: 'Allgemeine Überproduktion ist partielle Überproduktion' ('General overproduction is partial overproduction', Tugan-Baranowsky, 1901, p. 7). Hence, while stable expansion of the system is possible, if the right relationship between consumer and capital goods is maintained, such a growth path is unlikely, especially once money is

[8] A wide range of different spellings of Baranowsky's name has been used when translating his name from the Cyrillic into the Roman alphabet. Here 'Tugan-Baranowsky' will be used since this is the spelling used on the German translation of this *Theories of Trade Cycles* published in 1901, which was the earliest translation of the book.

[9] This point can be found again in Kalecki's profit equation where capitalists' profit in aggregate are only determined by their investment spending.

introduced into the analysis. Thus, while production decisions bring about economic fluctuations, they are exaggerated by money and capital markets.

On the one hand, financial markets can boost capitalist activity, since credit can create demand. On the other hand, financial markets and credit contribute towards stronger interconnectedness of individual producers, larger price fluctuations and speculation. As pointed out by Kowalik (Kowalik, 2012), among others, Tugan-Baranowsky's crisis theory, and especially the role finance plays in it, is not very elaborate. It appears to chiefly rest on the observation that rentiers' income (from financial instruments and real estate) does not fluctuate as much over the cycle as that of industrial capitalists.

The idea is that a pool of idle money builds up during the economic downswing, putting downward pressure on interest rates. This contributes to the economic upswing. Simultaneously, however, so-called 'free capital' (*freie Kapitalien*, in German) swell, and in the course of the upswing make their way as credit into the booming industries. This encourages speculation, which lays the grounds for the coming crisis. From Tugan-Baranowsky's (1901) exposition, it is not clear what exactly the transmission mechanisms behind these processes are. In a rather mechanistic and hardly insightful manner, he seemed to understand 'free capital' and credit as a type of reservoir, which once it has reached a certain level, floods all industries, leaving the economy in crisis.

Abstracting from Tugan-Baranowsky's simplistic analysis, Marx and the chief Marxist financial theorist, Hilferding, can be categorised as adhering to an endogenous money tradition, understanding the financial sector as creator of money. Furthermore, they identify non-financial business and their needs as drivers of credit extension. Nonetheless, for Hilferding, especially, it was the large German banks, which were the more powerful partner in the finance-business relationship, because they had an important degree of control over their business clients, who required the banks' provision of long-term finance.

5.2.1.2. The lasting influence of Wicksell

Where Tugan-Baranowsky's theoretical treatment of credit in the business cycle was artless, the theory put forward by his Swedish contemporary, Wicksell, was refined. Wicksell was one of the major influences on continental European (mostly German-speaking) economic scholars during the early 20th century (Ellis, 1934). His thought was so profound that Wicksell's work exercises a visible impact onto economic theory until this day (see, for instance, Woodford, 2003)[10].

Wicksell (Wicksell, 2006[1898]; Wicksell, 1907) was most original in putting forward a theoretical analysis set in a so-called 'pure credit' society, where money was neither a commodity (such as gold), nor backed by one. Thus, banks had in fact control over the money supply through their ability to generate credit. Wicksell's views were based on writings by English scholars of the 19th century such as Tooke and Fullarton, whose ideas are commonly labelled as the banking school.

In Wicksell's view (Wicksell, 2006[1898]), economic cycles emanated from mismatches between bank and natural rates of interest. The former is the money rate of interest actually present in the economy, while the latter is the rate necessary to align investment and savings. The natural rate of interest is therefore an equilibrium concept, and in Wicksell's theory a mere benchmark. When both rates are aligned there is no change of the price level in the economy. The bank rate of interest, however, is assumed to trail the natural rate, since banks do not immediately react to changes in economic circumstances (Ellis, 1934).

In consequence, cumulative processes can emerge in this theoretical setting. When the bank rate is below the equilibrating rate, investment opportunities for

[10] Although this reference should be qualified since Woodford merely claims Wicksell's name while presenting an analysis that is hardly in the latter's spirit.

non-financial firms in the economy are plentiful, given the low cost of credit. Hence, the strong increase in economic activity results in inflation, until bank rates are increased. Conversely, if the bank rate is above the equilibrium rate, a deflationary process is set off due to the high cost of external finance.

Therefore, for Wicksell, it was non-financial companies, which set off credit expansion through their credit demand, given an increase in returns on investment. Banks are somewhat passive in his framework. Even though they provide the additional funds that set off cumulative inflationary processes, this happens merely due to their slow reaction towards changing economic conditions.

Hayek summarised the reason for credit cycles succinctly:

> 'Die entscheidende Ursache der Konjunkturschwankungen ist also, daß infolge der Veränderlichkeit der Umlaufmenge der Zins, den die Banken fordern, nicht notwendig immer gleich dem Gleichgewichtszins ist, sondern in der Bewegung über kurze Fristen tatsächlich von den Liquiditätserwägungen der Banken bestimmt wird'[11] (von Hayek, 1929, p. 103).

This is at the core of Wicksell's argument. Hayek (1929) was determined to find a fault in Wicksell's theory, stressing that the Wicksellian benchmark of an equilibrium interest rate was misleading, as an economy might be outside of equilibrium without facing inflationary pressures. Despite Hayek's insistence on the shortcomings in Wicksell's theorising, their understanding of credit cycles (at least in Hayek's early work, which was to change subsequently) was essentially the same. This once again shows the profound influence Wicksell's analysis had on German monetary thinking.

Hayek became a follower of von Mises (Ellis, 1934). The latter subscribed to the quantity theory of money. For von Mises, credit extension was driven by

[11] 'The key reason behind business cycle fluctuations is therefore that, due to the variability in the volume of money in circulation, the interest rate demanded by banks does not always necessarily equal the equilibrium interest rate; but that in its movement over short periods the interest is determined by the liquidity considerations of the banks' (author's translation).

excessive bank lending incentivised through short-sighted government policies (Ellis, 1934). Political rationale would, according to von Mises, lead governments to favour low interest rates. This political intervention results in a bank rate, which is too low, causing business cycles and price level fluctuations in the economy. Once again, the influence of Wicksell's trailing bank rate (even though turned on its head, given that banks are not following the natural rate but are actively deviating from it) is clear.

In summary, Wicksell (in contrast to von Mises) understood banks as money creators. Lending, however, was driven by credit demand from non-financial businesses, with interest rates adjusted by banks when their liquidity positions became concerning. Thus, answering the question on agency for the Wicksellian framework is somewhat complex. While von Mises assigned agency to banks' (and ultimately, governments') lending policy, Wicksell appears to situate it in the interaction between banks' financial positions and non-financial firms' credit demand.

5.2.1.3. Endogenous money in Schumpeter's and Hahn's analysis

Among the German-speaking scholars of that time, two are particularly striking because of the originality of their thought: namely Hahn and, even more so, Schumpeter. Both utilised Wicksell's concept of the pure-credit (thus, cashless) economy, and both stressed the primacy of credit over deposits. However, while Schumpeter believed that credit expansion was chiefly driven by entrepreneurial need for external finance, Hahn believed that banks' liquidity considerations were the main determinant of credit volumes.

Hahn was a banker who turned to scholarly economics after completing a PhD in law (Hagemann, 2010). His subsequent economics PhD thesis, published in 1920, *Economic Theory of Bank Credit*, was widely discussed among financial

theorists of the 1920s.[12] Influenced by English writings on banking[13], Hahn emphasised that the asset side of a bank's balance sheet always dominated the liability side. Hence, money was lent out first, and only then were arrangements made to cover the position and any liquidity requirements (Hahn, 1924). This implied that savings were unimportant for investment or growth.

Hahn's contribution was very critically received, and was not helped by the socio-economic events in Germany at the time. In his early work, Hahn insisted that credit expansion did not create inflation. However, the reparations-induced hyperinflation was a major concern in Germany during the 1920s. The second (and major) part of his dissertation claimed that a sustained economic boom was possible, given adequate monetary and banking policy. During the 1920s in Germany such a vision must have appeared distant, if not completely unrealistic.

As a consequence of his bold statements, Hahn was labelled an inflationist and over time moderated his position until he came around to call his early work a 'youthful folly' (*Jugendsünde* in German) later in life (Hagemann, 2010).[14] Despite the bad timing and some exaggerated aspects in Hahn's *Economic Theory of Bank Credit*, the work was illuminating because it actually understood the nature of credit (see comments in Schumpeter & Schumpeter, 1986). Hahn's

[12] It was so controversial at the time that during the 1930s it seemed worthwhile writing PhD theses about Hahn's thesis. Wilhelm (Pollack, 1937) published his thesis on *Albert Hahns Volkswirtschaftliche Theorie des Bankkredits* in 1937.

[13] Hahn explicitly referred to Macleod's theory of credit. He could have, however, equally quoted Withers's ideas on credit (Withers, 1912).

[14] Hahn performed several 180-degree turnarounds during his life. While he was in favour of expansionary fiscal and monetary policies during the 1920s, he denounced them as dangerous subsequently. Hence, while he claimed to have anticipated Keynes's finding of the General Theory, he also objected vehemently to Keynesian-type policies. While modelling himself as proto-Keynesian in his youth, he was severely anti-Keynesian in his later life (Hagemann, 2010).

comments (in *Börsenkredite und Industrie*, 1929) concerning stock market credit demonstrate this.

By the early 20th century, the German-speaking public was deeply mistrustful of the stock exchange. This distrust had its roots in the second half of the 19th century when stock market excesses (such as the *Gründerkrise*, the promoters' crisis dated from 1873 to 1888) resulted in (sometimes fraudulent) speculation and economic crises. Popular opinion of the stock exchange was damaged so profoundly, that the German authorities established the *Börsenenquetekommission* in 1892, aiming to severely restrict stock market activity (Weber & Borchardt, 1999).

Among economic thinkers, the idea emerged that stock market activity diverts scarce funds from productive activity. Cassel (1927) rejected this idea (other academics who dismissed attacks against the stock market included, for instance, Weber[15]). Cassel was subsequently attacked by economists such as Reisch (Reisch, 1929, 1930), who argued that credit for equity purchases undermined productive investment. Cassel rejected the argument since the borrowed money would only briefly remain in the equity investors' hands and then make its way into the economy where it could be lent out again or invested (Cassel, 1927).

Reisch's argument about diverted scarce resources appears all too reminiscent of recent mainstream research, pointing towards the dangers of too much finance without thoroughly identifying the mechanisms at work (see Cecchetti & Kharroubi, 2012). The idea that credit for financial investment reduces funds available for production is based on the premise that the credit volume is limited since there is only some finite pool of money (or loanable funds) that

[15] Weber was involved in the drafting of the 1896 *Börsengesetz*, the stock exchange law. He argued against severe limitations to stock market activity. Weber's argument was not chiefly an economic one but tinted by power politics: Germany needed its stock exchanges to remain influencial in European finance (Weber & Borchardt, 1999).

can be advanced. Once this pool has been exhausted and has dried up, banks (and capital markets) have to wait until the pool is replenished to provide credit again.

For Hahn, the practical banker, it was clear that credit for equity market investment did not affect the economy except for its expansionary impact on banks' balance sheets. The volume of credit granted to stock market investors would simply show up as assets and subsequently as liabilities on banks' balance sheets (Hahn, 1929). Thus, there could not possibly be a detrimental effect on industrial investment as Reisch claimed, who interestingly was also a banker during the 1920s - a central banker. He was the president of the Austrian Central Bank, the Oesterreichische Nationalbank, between 1922 and 1932.

Another Austrian economist, Schumpeter, praised Hahn as having worked out 'a systemic theory that fits the facts of bank credit adequately' (Schumpeter & Schumpeter, 1986, p. 1115).[16] Despite Schumpeter's praise for Hahn's writings about credit (and the similarity in their approaches, Pollack, 1937) there was a fundamental difference in their understanding of the business cycle. For Hahn it was credit extension, which drove economic activity, importantly investment. For Schumpeter, by contrast, the investment behaviour and consequent credit demand of non-financial firms was the driving force behind the credit cycle (Schumpeter, 1983[1934]).

In Schumpeter's understanding of economic development, credit and the financial system first and foremost serve industrial development. Hence, credit is extended to non-financial firms so that they can invest in innovation, be it product, process or organisational innovation. All of these activities, together with the exploration and conquest of new markets and resources, count as 'new

[16] Schumpeter identified Macloed, whose analysis Hahn explicitly assumed as leitmotif (for instance, in quoting Macloed on the cover page of his *Economic Theory of Bank Credit*, Hahn, 1924), as the writer to undertake the first attempt at such a theory (Schumpeter & Schumpeter, 1986).

combinations', Schumpeter's term for innovation (Schumpeter, 1983[1934]). The possibility of consumption credit is acknowledged, but left aside, since lending for consumption purposes is not 'an element in the fundamental forms and necessities of industrial life' (Schumpeter, 1983[1934], p. 103).

But industrial credit is also definite in a specific manner; in fact it refers to what Keynes termed 'funding' (Keynes, 1937). It excludes the financing of circulating capital because this type of productive credit does not contribute to development, but merely to current reproduction. This can be financed through hoards – or saving – already present in the economic system. Here banks play the role of financial intermediary, pooling and lending out these hoards. However, this is not the major function of banks. Their ability to create purchasing power, by lending long-term (which becomes 'funding') and beyond funds existing in the economy, turns bankers into 'the capitalist par excellence' (Schumpeter 1983[1934], p. 74).

This statement is reminiscent of Hilferding's notion of 'finance capital'. However, in Schumpeter's work the functions of financial and industrial capitalists – to use Marxist terminology – appear more circumscribed and less integrated. This difference originates from their diverging perception of competition. Whereas Schumpeter believed in the innovative and self-rejuvenating forces behind market competition – as expressed in his ideas on creative destruction (Schumpeter, 1994[1942]) – Hilferding sketched out a theory based on ever-increasing economic concentration, that is trustification (Hilferding, 1947[1910]).

For Schumpeter individual entrepreneurs were necessary to ensure growth and progress, resulting in desirable bankruptcies of inefficient companies. In Hilferding's view capitalist competition was inefficient and wasteful, resulting in economic instability, bankruptcy and unemployment as companies engaged in unnecessary price wars. Therefore, a closer integration of financial and

industrial capital would increase economic stability, making the disruptive activity of Schumpeter's entrepreneur impossible, but also unwanted.

In Schumpeter's eyes the credit system played a crucial role in financing entrepreneurs and their new investment projects by creating money. The interaction between financial markets and entrepreneurs, however, also brought about economic depressions (or crises), since for him it was the driver of the business cycle. Upswings were caused by a swarm-like emergence of entrepreneurs due to innovation opportunities. Credit creation by the banking system fed the cycle, allowing entrepreneurs to reap supernormal profits, but also attracting imitators. The cycle turned as competition among entrepreneurs brought down prices, reducing the reflux – and therefore profit – from innovative investment.

The downswing was exacerbated by the financial system, as repayment of credit resulted in a contraction of purchasing power and consequent deflation in the economy. Hence, for Schumpeter the role of credit was to finance corporate investment into innovation. In this sense, banks mainly served the needs of innovating entrepreneurs. Hence, the non-financial firm and its credit needs dictated the credit volume extended according to Schumpeter. While banks did not fund all entrepreneurial projects, it was ultimately in the power of the individual entrepreneur to obtain credit through his or her superior entrepreneurial ability. Hence, if anywhere, the agency is with the (innovative) non-financial business in Schumpeter's analysis.

Table 5.2. Summary of macro perspective on finance, German-language tradition

	Macroeconomic role of financial institutions	Driving force behind credit extension	Agency in finance-business relationship
Heterodox economics German-language tradition	German-language tradition		
Marx and Hilferding	Money creation	Non-financial business	Banks
Wicksell	Money creation	Non-financial business	
Schumpeter/early Hahn	Money creation	Schumpeter: Non-financial business, Hahn: Banks	Schumpeter: Non-financial business, Hahn: Banks

Table 5.2. summarises the answers of the theories reviewed in this part (5.2.1.) to the three questions outlined in the beginning of the chapter. Of course, the German-language tradition is extremely varied. Thus, the table only provides stylised answers, focusing on specific strands of theory. Overall, it can be said that money creation through credit (rather than financial intermediation) was generally understood to be the function of financial institutions. Further, this was understood as driven by non-financial business. Finally, the finance-business relationship was seen as complex, yielding varying responses.

5.2.2. Keynes's analysis and post-Keynesian thought on finance

This section discusses the financial theory put forward by Keynes, alongside Marx the other major influence on heterodox economic thought, and the diverse group of thinkers usually referred to as post-Keynesian. Once again, the aim of this part is not to provide a complete overview, but to highlight the most salient and interesting contributions. Alongside Keynes's ideas (part 5.2.2.1.), circuitist thought (part 5.2.2.2.), Kaleckian finance theory (part 5.2.2.3.) and, finally, Victoria Chick's ideas on banking evolution will be covered (in part 5.2.2.4.). The last sub-section provides an elegant connection to the subsequent section, which will highlight some aspects of financialisation approaches. Chick's work on banking evolution is particularly important for emerging and developing economies because it provides a bridge between old development economics and (post-)Keynesian theory.

5.2.2.1. Keynes on the role of finance

Keynes was, with few exceptions[17], not especially interested in the German-language economic literature of his times (Garvy, 1975). Hence, his

[17] In his *Treatise on Money* (Keynes, 2011[1930], p. 199), Keynes admitted that his knowledge and more importantly, use of the German-language literature in his own work was very limited: 'I should have made more reference to the work of these writers if their books, which have only come into my hand as these pages are being passed through the press, had appeared when my own thought was at an earlier stage

understanding of the role of finance in the macro economy, while also based on endogenous money[18], differed from much of the German-language literature. Keynes saw the agency in the act of credit extension as located with banks rather than with non-financial corporations, as some of the economists writing in the German tradition would have argued.

During accelerating economic expansion, non-financial firms require bank finance to undertake their investment, meaning that 'in general, the banks hold the key position in a transition from a lower to a higher scale of activity' (Keynes, as cited in Asimakopulos, 1983, p. 227). This is particularly illustrated in Keynes's *A Treatise on Money* (Keynes, 2011[1930]). Chapter 37 is the pertinent point of reference, which is tellingly introduced with the words: 'I reach at last the crux of the whole matter' (Keynes, 2011[1930]).

For Keynes the crux of his exposition was the discussion of the Banking System's influence on monetary stability and macroeconomic activity at large. While Keynes debunked the quantity theory of money in this chapter, he assigned the ability (albeit circumscribed by a range of institutional and behavioural factors) to preserve monetary stability to the Banking System. The Banking System (capitalised by Keynes) refers to the interactions between the central bank and commercial banks.

Crucially, commercial banks can influence the volume of investment undertaken by non-financial firms through their credit terms. This influence is not exercised solely through interest rate changes (that is, the cost of capital) as

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of development, and if my knowledge of the German language was not so poor'. Keynes did, however, single out Neisser's work, towards which he was 'particularly sympathetic' (Keynes, 2011[1930], vol. I, p. 199, also discussed in Toporowski, 2012).

[18] As discussed by Chick (2005), between the 1930s and 1960s it was common in economic theory to assume money as endogenously created by commercial banks. This only changed with the advent of Monetarist dominance. Monetarism in its orthodox form requires the exogeneity of money, since the money supply is believed to be the government's main (and only desirable) policy tool.

often assumed in mainstream analysis. It is exerted due to the existence of a 'fringe of unsatisfied borrowers':

> 'The relaxation or contraction of credit by the Banking System does not operate, however, merely through a change in the rate charged to borrowers; it also functions through a change in the abundance of credit. […] There is, that is to say, in Great Britain an habitual system of rationing in the attitude of banks to borrowers' (Keynes, 2011[1930], p. 364).

Hence, the question about agency between commercial banks and non-financial firms is clearly answered in favour of commercial banks. Importantly, Keynes stated that the Banking System (i.e. the interaction between commercial banks and the central bank) determines the volume of credit extended. The role of the central bank here is to ration commercial banks to some extent. In fact, Keynes carried on to explain that the existence of the unsatisfied fringe of borrowers is the result of banks' financial positions:

> 'Thus there is normally a fringe of unsatisfied borrowers who are not considered to have the first claims on a bank's favours, but to whom the bank would be quite ready to lend if it were to find itself in a position to lend more' ((Keynes, 2011[1930], p. 365).

Thus, in Keynes's analysis the financial system played the role of enabling or slowing down investment expenditure by non-financial companies, which is the main driver of economic fluctuations and growth. Commercial banks are the ones that determine credit extension to non-financial business. However, they confront the central bank with their demands for central bank money, which they require to consolidate their reserve and liquidity positions (Keynes, 2011[1930], Toporowski, 2012). The persistence of a fringe of unsatisfied commercial banks and unsatisfied bank customers preserves the influence of the central bank over individual commercial banks, and of commercial banks over their clients.

5.2.2.2. Endogenous money

This idea is central to post-Keynesian thought on finance, which has been especially boldly articulated by Moore (Moore, 1979). Since the 1970s, Moore

(among other heterodox economists) very vocally fought the loanable funds doctrine dominant in mainstream economic thinking. Until today the credit multiplier theory is taught to economics students (e.g. Krugman & Wells, 2013). The suggested causal chain here runs from high-power (that is, central bank) money to deposits, which in turn determine a bank's ability to extend credit multiplied by a factor dependent on (and inverse to) the reserve requirement.

According to Moore (2003), the supply of bank credit is horizontal, given that the interest rate set by the central bank remains unchanged. In its open-market operations the central bank will attempt to provide commercial banks with somewhat less than their desired level of liquidity to ensure their recourse to the central bank's overnight lending facility. This is done with the aim of influencing short-term interest rates, that are set as mark-up on the overnight lending rate paid to the central bank. Crucially, commercial banks determine the volume of credit lent to their customers since they assess the collateral, income and credit history of borrowers. The agency over credit expansion lies, thus, within the financial sector, determined through the interplay between central banks and their commercial clients.

Among the post-Keynesian schools (and their close relatives, see Fontana & Realfonzo, 2005), the French and Italian circuit theories express the idea that banks have agency over credit extension most clearly. In the theory of the monetary circuit (Parguez & Seccareccia, 1999), which is often interpreted under the heading of financial Keynesianism (Bellofiore, 2013), banks extend money to non-financial firms in the form of credit before any production can take place. Subsequently, non-financial companies engage in production, which yields returns necessary to repay bank loans (and interest) to creditors. In order to repay credit non-financial business can also obtain money in the financial markets, which is crucial if households saved substantial amounts and refrain

from consumption. In this theoretical setting, all money is credit money and takes the form of debt.[19]

During the reflux phase, when non-financial companies have to meet their payment commitments to the banking sector a problem can occurs (Renaud, 1998, Parguez & Seccareccia, 1999): assuming that banks do not consume non-financial companies' produce, production cannot – in a given period – generate higher profit than the amount of credit advanced initially. However, this surplus would be necessary to meet principle and, crucially, interest rate payments. This problem can be solved in various ways: (1) If high-powered central bank money is present, non-financial business can sell their commodities to the public sector increasing their profits (Cavalieri, 2003). (2) In order to invest, non-financial companies turn to banks for investment credit, which raises profits of investment goods-producing corporations. Or (3) the circuit is closed since failures of banks and non-financial firms are a regular phenomenon of economic activity (Messori & Zazzaro, 2005).

Overall, the problem appears dependent on the strict separation of individual periods and the assumptions that credit must be paid off in the course of one such period. Therefore, it has been argued that the closure problem is based on a misinterpretation of the monetary circuit theory (Parguez & Seccareccia, 1999). However, this misinterpretation brings the power constellation between banks and non-financial business to the fore very clearly: while corporations might drive credit demand, the agency to create credit is with the banks.

[19] Circuit theorists argue that money has always been debt, illustrated in the fact that credit existed before coins or other means of circulation (Einzig, 1966; Parguez & Seccareccia, 1999). This view corresponds to Schumpeter's emphasis of the credit theory of money, which is the correct theoretical framework according to the Austrian economist. Unfortunately, much of economic thinking subscribes to a monetary theory of credit where money is perceived to precede credit (Schumpeter & Schumpeter, 1986). The latter is the basis for the loanable funds model.

5.2.2.3. Kaleckian finance theory

Within the post-Keynesian school another economist (apart from Keynes) was formatively influential: Kalecki. His work arguably both anticipated and was substantially different from Keynes's ideas (Lavoie, 2015). The difference in the theories of these two economists can be traced in their understanding of finance. Despite claims to the contrary (Kregel, 1989), Kalecki (in contrast to Keynes) followed the German-language tradition where non-financial companies, rather than commercial banks, drive credit extension (Toporowski, 2012).

Kalecki did not write extensively on finance. Much of his thought on finance was influenced by his colleague at the *Instytut Badań Koniunktury i Cen* (the Institute for Research in Business Cycles and Prices), Breit (Toporowski, 2013). Breit almost vanished into obscurity after he was murdered by the Nazi regime in 1942 (Toporowski, 2005; PWN, 2015), which makes an exposition of his thought all the more important.

Breit published his only monograph in 1933: *Stopa procentowa w Polsce* (The interest rate in Poland, Toporowski, 2005). Here, he elaborated on a business cycle theory based on government interference and a lack of competition among banks in the credit system (Toporowski, 2005). In this sense, Breit's earlier work was clearly influenced by Austrian economic thought à la von Mises, stressing inappropriate monetary and credit policies. Breit moved away from this position in his later work (see Breit, 1935).

The influence Breit and Kalecki had on each other manifests itself in the 'principle of increasing risk' (Kalecki, 1937). The 'principle of increasing risk' highlights the dependence of credit conditions offered by commercial banks on their clients' level of leverage. Breit (1935) stressed the lender's risk side of the argument, whereas Kalecki (1937) focused more on the borrower's risk (Chilosi,

1982).[20] Importantly, Breit, like Kalecki, maintained that companies' individual balance sheets determine what interest rates they will be offered. Moreover, abstracting from individual firms, Breit (1935) also argued that there was no reason to assume that interest rates should equalise across the money and capital markets. Deviations between short-term and long-term rates were not a sign of disturbances in the credit system, but rather accounted for uncertainty and the – as Breit called it – transformation cost of rolling over short-term credit. In the absence of costly transformation between short-term and long-term credit, interest rates would indeed equalise. Importantly, the equalisation of rates would not be driven by credit supply but by credit demand:

> 'Wären also mit der gegenseitigen Substitution der langen und kurzen Kredite keinerlei zusätzliche Kosten verbunden, so würde der Ausgleich der Kreditmarktraten in Wirklichkeit unvermeidlich sein. Doch würde er nicht seitens des Angebots, wie bisher angenommen wurde, sondern seitens der Nachfrage zustande kommen, *also durch Investierungen, die in größerem oder kleinerem Maße kurzfristig finanziert werden*' (emphasis in original, Breit, 1935, p. 646).[21]

Non-financial companies and their investment are the driving force behind the conditions in financial markets. While Kalecki understood credit to be endogenously created by banks (Sawyer, 2001), he stressed the presence of unattached deposits (Kalecki, 1990[1933]), that is, the savings of other capitalists, in the financial system. Hence, while banks could create credit *ex nihilo*, much of their function (in Kalecki's analysis) was to manage their balance sheets, creating assets (in the form of loans) against deposits capitalists hold with them. Hence, banks can exacerbate the business cycle but their actual

[20] Breit emphasised that above a certain threshold banks might curtail the amount of credit to companies due to increasing risk perceived by the bank. Kalecki refers to Breit's argument while stressing that firms borrowing to finance investment will themselves perceive a rise in risk with growing credit volume.

[21] 'If there were no additional costs linked to the substitution of long-term and short-term credit the equalisation of credit market rates would be inevitable. However, it would not happen from the supply side, as hitherto assumed, but from the demand side, hence *through investment, to a larger or smaller extent short-term financed*'.

influence on the cycle through lending and setting of commercial interest rates is 'to a large extent […] illusory' (Kalecki, 1990[1933], p. 151).

In fact, enterprises and their investment are the most important economic agents. Since for Kalecki profits are determined by companies' investment – the reflux principle – interest rates do not decisively determine private investment but rather firms' profitability. Thanks to reflux, firms' investment in aggregate finances itself during an economic upswing – abstracting from the foreign balance. Crucially, Kalecki assumed that non-financial businesses mostly fund their investment projects internally, that is, through retained profits.

One eminent author cannot be missing from a discussion of the role of finance in post-Keynesian economics: Minsky. Minsky formulated a business cycle theory (his Financial Instability Hypothesis) that identifies the investment finance decisions of non-financial firms (alongside their investment expenditure) as the force behind economic fluctuation. Since Schumpeter was his PhD supervisor, Minsky was strongly influenced by much of continental European economics. For instance, Kalecki's reflux principle – where firms earn what they spend – forms the basis of Minsky's Financial Instability Hypothesis (Minsky, 1986; Toporowski, 2005).[22]

In Minsky's Financial Instability Hypothesis (Minsky, 1986), the interaction between non-financial business and banks lies at the heart of economic activity and crisis. Firms drive the cycle through their speculative investment into productive assets, which is only possible given banks' credit extension. Hence, the question of agency behind the business (and credit) cycle is a difficult one. It

[22] It has been argued (Toporowski, 2005) that Minsky did not absorb Kalecki's business cycle ideas fully, since it is contradictory that both non-financial firms' profits and debt levels are assumed to increase over the cycle. The solution to this problem lies in the maldistribution of profits, a situation where some firms can concentrate profits among themselves. If these are different firms than those incurring increasing debt, a coexistence of ever-increasing profits alongside ever-increasing debt burdens can emerge (Michell, 2014).

has been argued that Minsky's thought follows the German language tradition, in which non-financial firms' decisions are crucial (Toporowski, 2012). However, this author argues that Minsky's work exhibits a stronger leaning towards the Keynesian than the German tradition, in particular with regard to understanding of finance.

Crucially, in Minksy's theory banks' bring about the turning point of the business cycle and the so-called Minsky moment, heralding crisis (Minsky, 1986). Over the cycle, non-financial corporations' borrowing increases in step with their investment spending. While in Schumpeter's theory of the cycle the downturn comes about as non-financial companies start paying off their credit, for Minsky the boom ends with an interest rate increase initiated by the Banking System: either endogenously by commercial banks, trying to protect their liquidity positions, or exogenously by the central bank, alarmed by the economic boom. For Schumpeter (1983[1934]) the actions of corporations bring about the cycle swing, while for Minsky it is the financial system. Thus, in the Financial Instability Hypothesis the agency behind credit extension (and its recall) is with the Banking System.

5.2.2.4. Evolutionary banking theory

Finally, this section turns to Chick's (1992) work on the evolution of banking at this point, because it is in Keynes's spirit while bridging the gap to the current debate (in heterodox circles) on financialisation. The evolutionary banking approach, which goes back to the works of de Viti de Marco and Dahlberg in the 1930s (Fontana & Realfonzo, 2005), reconciles Keynesian thought and old development economics, which hold diametrically opposing views on the role of savings in economic activity. While Keynes and the post-Keynesians hold that investment creates savings, old development economists, like Lewis, see savings as the decisive constraint to countries' growth and development records (see part 5.1.2.2.). Of course, Keynes formulated his ideas for advanced economies, while development thinkers like Lewis had poor developing

countries in mind. And in this difference, we find the key to reconciling the two views[23]: a different stage of development entailing a different set of institutions.

Table 5.3. Victoria Chick's stages of banking evolution (Chick, 1992)

Development stage	Characteristics	Applicable theory
Stage 1	Numerous, small banks, geographically semi-isolated; Bank liabilities not used as means of payment, repository for savings (deposits, D), expansion in lending (L) reduces reserves (R).	Loanable funds: **$\Delta D \rightarrow \Delta R \rightarrow \Delta L$**
Stage 2	Banks gain confidence; Fewer banks; Bank payment is convenient; Transaction balances finance the consumption circuit. Banks can create loans without losing reserves.	Bank deposit multiplier: **$\Delta D = (1/r)\ \Delta R$**
Stage 3	Interbank lending develops supplementing call-money mechanisms, making reserve use more efficient;	Bank deposit multiplier: **$\Delta D = (1/r)\ \Delta R$**
Stage 4	CB fully accepted responsibility for financial stability. If a policy of stable interest rates is in place, reserves virtually disappear as a constraint on bank behaviour.	**$L_d = \Delta L \rightarrow \Delta D \rightarrow \Delta R$**
Stage 5	Banks develop liabilities management, compete for depositors; Aggressive expansion and lending, managing liabilities/funding asset subsequently	Financialisation of banking sector: **$L_s = \Delta L \rightarrow \Delta D \rightarrow \Delta R$**

Chick (1992) stresses that financial institutions are time and country-specific, rather than generic, as often implicitly assumed. She puts forward a framework

[23] Which were very closely related, for example, in the work of the Latin American structuralists (Hunt, 1989) headed by Prebisch, often called the Latin American Keynes.

that accounts for five stages of financial development (see Table 5.3. below), which is modelled on the progress of financial intermediation in the UK economy. Crucially, Chick links different stages of development with different theoretical conceptualisations of finance.

Hence, stage 1 where banks are small, numerous and geographically semi-isolated and cash payments dominate economic activity, appears to be best captured by the loanable funds theory. Here, banks are mere depositories for savings. Thus, credit extension drains reserves, which effectively limits the overall credit volume. As will be discussed in detail in the following chapter, in South Africa this stage was prevalent during the 19th and early 20th century.

As banks become more integrated, consolidate and importantly, bank transactions dominate cash payments, the financial system evolves to a stage where reserves increasingly cease to determine credit volumes. With the establishment of a deep interbank money market and, crucially, the acceptance of the central bank of its role as lender of last resort (which it exercises not only during crisis times), banks are more and more free to generate credit regardless of their liability structure. A shortfall in liquidity can always be met through the interbank money market or the overnight discount window at the central bank.

The final stage in Chick's evolutionary scheme is one where banks are thrown into competition with other financial companies and therefore, aggressively give out loans, while actively managing their liabilities. In this way, they attempt to grow their loan book, capturing as much market share as possible, while only subsequently looking for funding assets. This scenario is reminiscent of Hahn's ideas on bank credit extension. The agency here is certainly with the banks, which can (and must, given competitive pressures) expand their loan supply without limits.

As mentioned, evolutionary banking theory is especially important from the viewpoint of developing and emerging economies, which by definition possess financial structures that are in the process of (often rapid) change. Old

development economists like Lewis rejected the idea that investment results in savings, implicitly embracing the loanable funds theory. This attitude might be founded in an observation that in the first half of the 20th century (when development economics established itself as an independent discipline) many developing countries had very rudimentary financial systems, which could be subsumed under stage 1 outline in Table 5.3. In this way, evolutionary banking theory can reconcile Keynesian theory and old development economics.

Chick formulated these ideas in the mid-1980s, long before the term 'financialisation' was coined.[24] But she did this with astounding foresight. Her argument culminated in the insight that there was no obvious limit to (or optimal level of) credit extension because demand and supply for credit have no clear restrictions. The institutional characteristics of the final stage of financial development are those that many heterodox economists would associate with financialisation.

5.2.3. The financialisation approaches on the role of finance

This section outlines the role of finance in the macro economy as it is understood by the financialisation literature. This literature is inspired by Marx and Keynes. Since chapter 2 has discussed different financialisation approaches from the perspective of non-financial firms, this section will sketch the salient contributions from a macroeconomic perspective. Thus, the following overview is kept deliberately concise.

What the different financialisation approaches undoubtedly agree upon is that financial operations and the financial system importantly shape (if not outrightly drive) real economic activity. Here, this literature is diametrically opposed to early mainstream theory, in which finance was a mere veil. Thus,

[24] The term 'financialisation' was coined in the mid-1990s. Arrighi (Arrighi, 1994) used it in his 'The long twentieth century'. But our present understanding appears to be closer to Phillips (Phillips, 1994) usage of the term in his book on the influence of financial on the changing political landscape in the US.

this chapter provides a tour of diverse economic thinking on the role of finance in the economy, starting with theories that completely neglect finance and finishing with theories that potentially exaggerate its influence.

While specific ideas within the financialisation discourse can be found in writings by a range of critical and illustrious scholars of the late 19th and 20th century (see Erturk, Froud, Johal, Leaver, & Williams, 2008), the origins of the literature go back to macroeconomic inquires on the reasons for the secular decline in investment rates across OECD countries since the 1970s. Once again, the regulationist school and its discussion of changing accumulation regimes (see chapter 2) are important to mention.

Authors of this theoretical approach were particularly clear-sighted in highlighting the interaction between shifts in information technology and financial globalisation (Chesnais, 1996). This, so the argument goes, allowed capital to escape the consequences of declining profitability in production, by re-orienting accumulation towards financial profits. Some writers identified a merging of financial and industrial capital (in the form of transnational corporations, see Serfati, 1996, 2008) as the outcome of the process. Hence, the role of finance in this analytical framework is to generate profits. The agency question ('Who drives credit cycles? Banks' willingness to lend or firms' desire to borrow?') is transformed into a question of: Who makes the profit? Financial institutions or non-financial firms? For some authors – like Serfati – the difference between these two types of institutions is insignificant.

In much of the financialisation debate, the agency (and the power) is clearly situated with the financial sector, be it with banks or other financial institutions. Financialisation is then identified as a process that increases the power of financial institutions vis-à-vis non-financial business among other agents. The work by Schaberg (1999) is an early illustration of this understanding. Schaberg is cited as precursor for the insight that increased financial dominance results in lower investment rates (Stockhammer, 2013). He employed a framework

inspired by Gerschenkron (1976[1962]) and Hirschman (2004[1970]), which stressed institutional differences across countries' financial systems.

Two ideal types of financial systems are identified: the market-based and the bank-based system.[25] While the Anglo-Saxon countries are usually associated with the former, Japan and Germany (and to a lesser extent France) are examples of the latter. In market-based systems capital markets (and consequently equity investors) are more important for non-financial companies' investment financing than in bank-based economies, where non-financial business and their external financing are closely intertwined with large banks. Schaberg (1999) argued that bank-based countries (especially France) have increasingly moved towards a more market-based regime since the 1970s. This move and increased financial investment by non-financial firms were arguably at the heart of declining investment across OECD countries.

As will be discussed in detail in the next chapter, the bank-based-market-based dichotomy was heavily criticised and empirically challenged; most convincingly by Jenny Corbett and Tim Jenkinson (1996, 1997), who showed that the majority of investment across OECD countries is financed through retained profits, rather than external finance. Thus, the suggested classification of countries into bank-based and market-based economies could not be upheld empirically.

Nevertheless, Schaberg's argument survived, echoed in subsequent research, which argues that the increased influence of finance (that is, financialisation) results in lower private-sector investment (see, for instance, Stockhammer, 2004;

[25] A similar literature emerged around the contributions by Hall and Soskice on varieties of capitalism. Hall & Soskice (2001) distinguished between liberal market economies and coordinated market economies. The concepts are closely connected to the bank-based-market-based dichotomy. However, this body of research appears to focus on the comparative study of institutions and country classification, rather than critical analysis. As a consequence, its contribution to answering the agency (and power) question between finance and non-financial companies is limited. For these reasons, the literature is not included in this review of most salient contributions.

Orhangazi, 2008 and, specifically for emerging economics, Demir, 2007). Another aspect of Schaberg's work is also present in some authors' understanding of financialisation, namely that financialisation entails the shift from a bank-based to a market-based financial systems.

Aglietta & Breton (2001), for instance, recognise bank-based and market-based financial structures as part of any sophisticated financial system. However, the process of financial liberalisation and the increased importance of financial markets have led, in their view, to a shift of emphasis away from bank-based structures to market-based elements. Lapavitsas (2009, p. 9) ascribes a driving force behind the financialisation of developing economies to the World Bank and the International Monetary Fund (IMF), which 'led developing countries to alter the balance of domestic finance away from bank-based, relational, government-controlled toward market-based, arms-length, private institutions and mechanisms'. From this perspective (especially following Lapavitsas) a sure sign of financialisation of the firm (and an economy more broadly) is the shift of external financing away from bank lending towards financial markets. Interestingly, this last proposition has been explored for the New South Africa (see Rodrigues Teles Sampaio, 2012), but could not be confirmed.

Importantly, in the debates about financial market structures non-financial firms are often perceived as passive financial entities, adapting to changing external pressures such as, for instance, the growing influence of shareholder value (Lazonick & O'Sullivan, 2000). Chapter 2 outlined the concept of shareholder value in detail. It refers to the need of non-financial corporations to conform to financial measures of profitability, satisfying their shareholders by maximising the value of the latter's financial investment into those corporations. Toporowski's capital market inflation theory provides an important counter position to this stylised passivity of non-financial corporations (Toporowski, 2000).

Capital market inflation theory explains the changes in the two big Anglo-Saxon financial systems as resulting from the rising importance of institutional investors, coupled with changes in middle class saving behaviour (Toporowski, 2015). The theory is set in a Kaleckian framework and could equally have been reviewed as modern extension of Kaleckian economic thought in part 5.2.2.3., especially since its author is rather critical of the financialisation literature (see Michell & Toporowski, 2013).

Capital market inflation theory, builds upon Steindl's concept of 'enforced indebtedness', which describes the detrimental impact of household saving on non-financial firms' profits (Steindl, 1989). Since household saving is a leakage from the schemes of reproduction, profitability of non-financial business is only warranted if investment expenditure by non-financial firms is at least as high as this leakage. If investment falls below the level of household saving, some firms are forced into debt.

This becomes the rationale for non-financial corporations to manage their balance sheets more actively, investing into liquid and financial assets; especially since spells of stock market booms provide cheap finance. Importantly, in the capital market inflation theory listed non-financial corporations are actively engaged in the structural changes that the relationship between financial markets and non-financial business is undergoing, rather than being passive. Hence, in this framework credit extension is driven by the interplay between finance and non-financial companies (as in the Kaleckian and Schumpeterian setting), while agency in the finance-non-financial business relationship is nuanced, impacted by entities' heterogeneity (small companies will be at the mercy of a banks, while large corporations have considerable power vis-à-vis financial institutions).

Much of the financialisation literature addresses the category of power very directly. Here, by definition, financialisation involves a shift of power towards financial institutions. Epstein and others (Epstein, 2002; Epstein & Power, 2003;

Jayadev & Epstein, 2007), for instance, regard the rise of the financial rentier as central in the process of financialisation. With increased power held by financial investors, policies that benefit this group of people (such as inflation targeting) have been implemented by government authorities.

The work of Duménil & Lévy (2013) also very clearly gives the financial sector agency, making it, since the rise of neoliberalism, the more powerful partner in the relationship between non-financial business and finance. Their peculiar interpretation of financialisation is one of reoccurring shifts in power among the three classes: workers, managers, and (financial) capitalists. Since the 1970s, a rise in neoliberal policies – so the argument – has benefited financial interests at the expense of organised labour. For Duménil & Lévy (2013) managers are the crucial class which either aligns its interests with workers (as during the Fordist years of the 1950s and 1960s) or the capitalist class, which if unfettered will pursue their financial interests. Financialisation once again is seen as a process that shifts power towards finance.

The financialisation literature has its origins in advanced economies. In the context of developing and emerging economies, research on the changing nature of financial institutions often focuses on the growing financial vulnerability of these countries as result of their increasing integration into global financial structure (for instance Chandrasekhar & Pal, 2006, or Akyüz, 2015). Therefore, financial liberalisation – advocated by proponents of the financial deepening hypothesis discussed in part 5.1.3.1. – and its link with currency and economic crises is a major research theme. The turbulent 1990s and early 2000s, which saw currency crises in Russia, East Asia and across Latin America, provided ample material to study the destabilising impact of capital flows (see, for instance, de Paula & Alves, 2000; Grabel, 2003; Cruz, Amann, & Walters, 2006).

In this context, Minsky's Financial Instability Hypothesis was a popular analytical framework to explain the build-up of financial fragility as a result of

financial deregulation and booming capital inflows (see, for example, Kregel, 1998; Dymski, 1999; Arestis & Glickman, 2002). Financial liberalisation reforms typically raised interest rates in emerging economies. This made financial investment attractive for foreigners, resulting in rising capital inflows that translated into asset price inflation. As long as the inflationary dynamics were in motion (powered by further capital inflows) emerging economies were booming, however, at the price of deteriorating balance sheet positions of local non-financial businesses.

Once the capital inflow dried up, because the financially fragile situation of local firms started surfacing, inflationary dynamics transformed quickly into deflationary ones, bringing about an economic bust and a currency crisis. These scenarios were often worsened by managed (or quasi-pegged) exchange rates, making the devaluation process even more painful, as domestic debt denominated in foreign currency ballooned.

While the body of research around currency crises in emerging economies does not officially run under the label of 'financialisation' it highlights the distinctiveness of financial institutions in emerging and developing countries, therefore, forming the basis for the growing literature on financialisation in emerging markets. What it further demonstrates is that agency and power often are not located within the country (somewhere in the interaction between financial institutions and non-financial firms), but rather outside of it with the global financial structure and institutions.

The integration of emerging economies into global financial structures through financial liberalisation is also believed to increase speculative financial investment by domestic non-financial firms (see Farhi & Borghi, 2009; Correa, Vidal, & Marshall, 2012). This theme was discussed in more detail in chapter 2, dealing with the non-financial corporation specifically. It is sometimes argued that this microeconomic trend jeopardises the industrialisation process on the macroeconomic level in emerging economies (Chandrasekhar, 2013).

Generally, the financialisation process in these countries is understood to be different from that in advanced economies and locally specific (Becker, Jäger, Leubolt, & Weissenbacher, 2010). This thesis contributes to the specific literature on the changing character of the South African financial system.

Table 5.4. Summary of macro perspective on finance, (post-)Keynesian tradition

	Macroeconomic role of financial institutions	Driving force behind credit extension	Agency in finance-business relationship
Heterodox economics	(post-)Keynesian tradition		
Keynes	Money creation	Banks	Financial sector
French/Italian circuitists	Money creation	Non-financial business	Banks
Kaleckian theory	Money creation	Non-financial business	Non-financial business
Evolutionary banking theory	Institutions-dependent	Institutions-dependent	Institutions-dependent
Financialisation approaches	Money creation	Banks/financial sector	Financial sector

5.3. Summary and conclusion

By way of summary, the answers to the three questions guiding this chapter are provided here. These three questions were: (1) What is the macroeconomic role of financial institutions? (2) What (or who) drives credit extension? And (3) who is the more powerful party in the interaction between financial intermediaries and non-financial corporations?

For mainstream economic analysis the role of the financial system is one of economic intermediation. With the advent of New Keynesian economics, this function was extended to include risk management. Therefore, with a few exceptions at the more enlightened mainstream fringe, the loanable funds theory remains central to orthodox economic thinking. Once again, it should be stressed that this has not always been the case and mainly developed after the 1960s. In consequence, credit extension is determined by loanable funds saved and the agency (if there can be any agency in a perfectly competitive market) really is with those who save.

By contrast, German language economic theory was so rich due to the absence of any firm consensus. Thus, it is not the intension to portray it as uniform by answering the three questions in an unequivocal way. Nevertheless, certain

strands (with certain answers to the three questions) can be identified. The Austrian tradition around von Mises would have subscribed to the loanable funds theory, while assigning the driving force behind credit extension to banks and their inadequate interest rate policies. Hahn and Schumpeter, who arguably had the most profound insight into the workings of credit, would see the role of the financial sector as one of endogenous credit creation. Their assessment of who drives credit extension and agency would, however, have differed fundamentally. Hahn (at least in his early writings) assigned banks the power to extend unlimited credit. The agency was, therefore, with banks, only limited by central bank intervention. For Schumpeter, in contrast, entrepreneurs and therefore non-financial companies drove credit extension. Thus, non-financial firms were the powerful partner. Even though Kalecki is typically labelled a post-Keynesian thinker his understanding of finance in the macro economy was essentially very close to Schumpeter's.

Hahn's early ideas on credit were mainly influenced by English writings on banking and, maybe unsurprisingly, similar ideas can be found in Keynes's writings on finance. Once again, the banking sector creates money endogenously. But the interaction between banks and the central bank determines credit extension. The agency and power is therefore with the Banking System, which non-financial companies face in their demands for credit. The post-Keynesian tradition and much of the financialisation debate follow this conviction. The role of financial institutions is to create money and financial instruments. They are the driving force behind credit extension and are also the more powerful party in their interaction with non-financial firms. The financialisation literature explicitly stresses that the financial sector is in fact growing its power vis-à-vis other entities and notably non-financial business.

Generally, the recent mainstream and the heterodox literature fundamentally differ in their understanding of credit: While it is exogenously determined

(through the loanable funds framework) for orthodox economists, it is endogenously created for heterodox writers. Within the heterodox tradition, the split runs along the lines of agency: There exists a German-language tradition (even though not all German-language thinkers ascribed to it), which sees the agency behind financial transactions with non-financial corporations. Keynes, most of the post-Keynesians and much of the financialisation literature see the agency with financial institutions and view non-financial companies as victims of increasing financial power in the economic system.

Table 5.5. Summary of macro perspective on finance

	Macroeconomic role of financial institutions	Driving force behind credit extension	Agency in finance-business relationship
Mainstream economics			
Post World War II orthodoxy	Wealth preservation, financial intermediation	Household saving	n/a
Financial repression hypothesis	Wealth preservation, financial intermediation	Household saving	n/a
New Keynesian models/ current consensus	Wealth preservation, financial intermediation & risk management	Household saving	n/a
Heterodox economics German-language tradition		German-language tradition	
Marx and Hilferding	Money creation	Non-financial business	Banks
Wicksell	Money creation	Non-financial business	
Schumpeter/early Hahn	Money creation	Schumpeter: Non-financial business, Hahn: Banks	Schumpeter: Non-financial business, Hahn: Banks
Heterodox economics		(post-)Keynesian tradition	
Keynes	Money creation	Banks	Financial sector
French/Italian circuitists	Money creation	Non-financial business	Banks
Kaleckian theory	Money creation	Non-financial business	Non-financial business
Evolutionary banking theory	Institutions-dependent	Institutions-dependent	Institutions-dependent
Financialisation approaches	Money creation	Banks/financial sector	Financial sector

Chapter VI: A Flow-of-Funds Approach to Understand the Interaction between Finance and Non-Financial Firms in the Macro Economy

As stressed in the methodological discussion in chapter 1, in this dissertation the view is taken that economic theory is time and space dependent, rather than universally true. Hence, the varying theoretical perspectives on finance presented in chapter 5 might have been applicable only to certain economies at certain times. In fact, contradictory theories might have been equally correct for specific countries, but in different historical periods.

This dissertation focuses on South Africa. Hence, the three questions about (1) the macroeconomic role of financial institutions, (2) the driving force behind credit extension, and (3) agency the interaction between financial intermediaries and non-financial businesses have to be answered specifically for this African emerging economy. This chapter will provide the tools to address these questions, which will subsequently be answered in chapter 7. A response to the question of what roles both finance and non-financial firms play in aggregate can only be found using flow-of-funds analysis. The flow-of-funds approach, depicted in detail in section 6.1., is crucial to unveiling the close links between real and financial operations, as well as the interdependence between economic aggregates in the economy.

Furthermore, the flow-of-funds approach has been adopted to shed light on the second question concerned with the driving force behind credit extension. The literature attempting to classify financial systems using the dichotomous categories of bank-based vs. market-based economies has embraced flow-of-funds analysis in its empirical application. Section 6.2. will provide an overview of the most relevant developments within this research strand and identify a method suitable to answering the three questions for South Africa. The method

suggested as most useful for purposes at hand was developed by Corbett & Jenkinson (1996, 1997), calculating net financial sources and uses of funds. This approach is reasonable when focusing on real sector investment only. The approach will be adapted to account for financial investment, which necessitates the inclusion of gross (and not merely net) flows.

The flow-of-funds accounts were developed mainly based on the work of the US-American institutionalist Morris Copeland. Thus, the flow-of-funds approach is intellectually indebted to the old economic institutionalism school. This school of thought stressed the dependence of economic institutions on their historical context. Therefore, section 6.3. will provide a historical view on the developments among non-financial businesses and financial institutions, in aggregate, in South Africa. This overview helps to answer the third question about agency and power in the interaction between the two economic sectors. The chapter argues that the bank-based-market-based dichotomy is not useful to understand the development of the financial sector and production, more generally, in South Africa. Historically, it was the corporate non-financial sector, specifically mining companies, that shaped the development of financial markets in South Africa. Thus, this thesis argues that in contrast to popular perception (see Amphlett, 1914; Jones, 2009) the domestic financial sector as well as British banks contributed little towards the development of South African industry. Due to the lack of domestic external finance, the South African mining-finance houses emerged, which had strong ties to European financiers (rather than British banks, more narrowly) and, over time, emerged as powerful financial players due to their ability to generate large financial funds internally.

6.1. The flow-of-funds approach in detail

6.1.1. A brief historical perspective

The flow-of-funds accounts were developed and first published in the United States. Hick's *The social framework* (Hicks, 1943) is sometimes regarded to be an early predecessor of the statistical work on national financial accounts (see Roe, 1973). However, his book does not contain any explicit treatment of the financial dimension necessary for flow-of-funds accounts, apart from a fanciful comment to give 'similar elementary treatment to Money and Finance' in an envisaged sequel publication (Hicks, 1943, p. vi).

However, Copeland and his research team and later the Division on Research and Statistics at the Federal Reserve (Fed) pioneered the actual compilation of flow-of-funds accounts (Roe, 1973, Taylor, 1996). The first flow-of-funds data for the US, which Copeland called 'moneyflows', were published in 1952 (Copeland, 1952). During the 1950s, the accounts were adjusted and renamed from moneyflows to flow of funds to avoid any confusion with movements in cash stocks (Cohen, 1972) and bring the terminology closer to business accounting (Taylor, 1996). In 1955, the Federal Reserve published a historical annual series of flow-of-funds accounts: *Flow of Funds in the United States, 1939-1953*. And shortly after, the Fed began to produce quarterly flow-of-funds statistics, which were demanded by the Fed's board of governors to better inform policy making and economic forecasts (Taylor, 1996).

Copeland's original approach (and similarly, the 1955 accounts) contained a range of imputed transactions especially for non-financial transactions such as employers' expenditure on wages, non-financial firms' interest spending etc. These variables were difficult to calculate on an annual basis. In fact, Copeland's original accounts were extremely detailed, splitting the economy up into ten sectors, namely: households, farms, industrial corporations, business proprietors and partnerships and others, state and local government, banks and US Monetary Funds, life insurance companies, other insurance carriers, security

and realty firms, and the rest of the world (Copeland, 1952). The transaction items listed were equally comprehensive, resulting in almost 140 pages of tables to cover a sample worksheet of moneyflows, which was provided in Copeland's 1952 publication for the year 1939.

Hence, in order to deliver quarterly accounts the imputed values were replaced by the income and expenditure accounts from the US national income and production accounts (NIPA), which were developed by Richard Stone during the 1930s.[1] As a result, the flow-of-funds accounts were simplified (Cohen, 1972).[2] Following the US, other countries also implemented the statistical innovation of the flow of funds because the data were believed to support monetary policy. In the UK, the Radcliff Committee stressed the need for flow-of-funds data in 1959 and the first accounts, covering the years 1960-1962, were made available in 1963 (Bank of England, 1972). In South Africa, B. van Staden pioneered the work on flow of funds in 1962. This first compilation was limited to the main financial assets and liabilities, and focused mostly on the government sector alongside banks in aggregate and other financial institutions (Uys, 1984). By the end of the 1960s, internationally standardised procedures for flow-of-funds compilation were established by the United Nations, aiding the proliferation of flow of funds as statistical tool across countries.

For South Africa, flow-of-funds data are available in the National Financial Accounts, published regularly in the South African Reserve Bank's (SARB) Quarterly Bulletin. The first national financial accounts were published in 1982 for the year 1980. Since then the SARB has regularly included flow-of-funds data in the Quarterly Bulletin. Initially, this was annual data. Starting in 1990, quarterly national financial accounts were made available. These were

[1] See Samuelson & Nordhaus, 1999, for a history of NIPA.

[2] According to some commentators this marrying up of the flow-of-funds with the NIPA system could not have been in Copeland's spirit (Taylor, 1996) since it substantially narrowed down the original work

published in a (by now rare[3]) supplement to the SARB Quarterly Bulletin for December 1994 (SARB, 1994). Along with the introduction of quarterly flow of funds, the issue also included historical national financial accounts for the period 1970-1979. These South African data covering 1970 until today will be the basis for the empirical analysis in the next chapter.

6.1.2. The flow-of-funds matrix

The flow-of-funds accounts are commonly presented in matrix form. The columns (*j*) represent different economic aggregates, whereas the rows (*i*) account for transactions of assets/liabilities (Green, 1992). Cells typically contain gross transactions, meaning that each cell is split into two, containing sources (S) and uses (U) of funds for sector *j* and transaction item *i*. Therefore, each cell (*i, j*) shows sales and purchases of asset/liability *i* by sector *j* over a given period, usually a quarter or a year. Tables A.2. and A..3. in the appendix provide the latest national financial accounts for South Africa as illustration.

The accounts are based on the quadruple-entry principle. There are four entries for each transaction because the two parties to a transaction each record a change in sources and uses, resulting in four entries. Importantly, for each sector sources and uses have to balance, since total spending on real and financial assets must be backed by an equivalent volume of funds. Similarly, for each transaction item (which is listed in the rows) total sources and uses must balance since one party's expenditure is another party's receipt.

Overall, the sector balances have to add up to zero. The aggregate balance of the private sector (households, non-financial businesses and financial intermediaries), the government sector and the rest of the world have to sum to

[3] Generally South African national statistics are relatively easily obtainable, especially since the SARB provides the majority of it online. In contrast to the Quarterly Bulletins, however, this crucial supplement is not available on the SARB's webpage. Consequently, the author had to track down a hard copy of the publication, which proved to be extremely rare. Therefore, the analysis presented in the following chapter is one of the only historical discussions of the South African national financial accounts, covering the period 1970-2014.

zero because all expenditure in a country has to be backed by funds received. This is – in a nutshell – Godley's three balances approach. In practice, recording of transactions is of course imperfect and a balancing item is introduced to smooth out any recording errors.

The number of rows and columns depends on the degree of disaggregation and is guided by data availability. In the early UK flow of funds, for instance, only six sectors were listed: the public sector, overseas sector, personal sector, industrial and commercial companies, banking sector and other financial institutions (Bank of England, 1972). Notably, the order of and terminology used for the six sectors is the one chosen by the Bank of England.

By contrast, the first South African national financial accounts contained far more detail concerning different financial institutions. The South African flow of funds have always been organised into five major sectors in the following order: foreign sector, financial intermediaries, general government, corporate business enterprises and households. These sectors then have various sub-sectors. Most attention is given to the disaggregation of the financial intermediaries, which have five sub-aggregates: Monetary authority, other monetary institutions, the Public Investment Commissioners, insurers and retirement funds and other financial institutions.

During the 1980s an additional sub-sector was included (namely, other deposit-receiving institutions), to account for the increased importance of building societies in providing mortgages during the 1970s. The sub-sector disappeared from the accounts by 1990, presumably because building societies lost in importance over the 1980s, as the financial sector experienced a growing level of concentration. Building societies expanded rapidly between 1978 and 1980 under conditions of cheap and easy liquidity (Skinner & Osborn, 1992). Liquidity tightened from the mid-1980s onwards, when South Africa struggled to raise foreign currency through both private sector and International Monetary Fund (IMF) lending (Padayachee, 1991). In consequence, most

building societies either were taken over by banks or squeezed out of business during the 1980s, explaining their exclusion from the national financial accounts.

This development illustrates that the flow-of-funds matrix is in constant flux, adapting to the rising importance of new financial transactions, and potentially also the changing significance of sub-sectors. Importantly, the flow-of-funds matrix contains non-financial transactions in the top rows, which are taken from the income and expenditure accounts. In this way the flow of funds provide a link between real and financial operations of the different economic aggregates in the overall economy. These non-financial transactions are gross saving and gross investment. They are crucial to determine whether a sector is a net lender, i.e. its gross saving exceeds gross investment for a given period, or a net borrower, i.e. gross saving falls short of gross investment. In other words, if the sources of funds of a sector exceed its uses of funds, the sector is a net lender. Conversely, if uses are larger than sources of funds, the economic aggregate has to become a net borrower.

Finally, as with all data, flow-of-funds accounts are shaped by a significant amount of domestic accounting convention. In the case of South Africa it is striking that the foreign sector and subsequently financial intermediaries are listed first when reading the accounts from left to right. This order appears to imply the perceived importance of the aggregates in the financial flows of the economy. The fact that financial intermediaries are far more disaggregated than any other sector supports this view. Equally, it is somewhat surprising to see the monetary authority listed as part of financial intermediaries rather than general government. This is linked to the ownership structure of the SARB, which has legally always been and remains a private (and privately owned) entity (see SARB, 2015). The more recent emphasis on central bank independence arguably supports this type of ownership arrangement.

6.1.3. The strength and weaknesses of flow-of-funds analysis

When Copeland published his first complete set of moneyflow accounts in 1952, the statistical innovation was hailed as pushing the frontier of economic model-building. Mitchell reportedly expected the flow of funds to be as popular with the next generation of economists as the GDP had been previously (Cohen, 1972). These expectations proved overly optimistic.

Among economic practitioners flow-of-funds analysis is very popular, much more so than among academic economists. During the 1960s and 70s, when the work on financial accounts was still in its early stages, the lack of academic interest was put down to limited data availability across countries and especially for stock data, which is comparable to a balance sheet for the economy as a whole (Bank of England, 1972). Stocks are necessarily needed to accompany flows to provide a complete picture. Hence, anticipating a change in academic attitudes, once the data would be provided, textbooks on the compilation and interpretation of flow-of-funds accounts were written during these years (see, for instance, Powelson, 1960 and Mason, 1976).

Today, despite excellent data availability for many advanced economies and good quality of flow-of-funds data in a range of emerging economies (including South Africa) the situation has not changed much. Discussions of flow-of-funds analysis often explicitly address practitioners (such as the excellent edited volume by Dawson, 1996), seemingly aware of the lack of academic interest. One reason might be the difficulty to impose simple economic models onto the flow of funds due to the level of detail that financial accounts contain (Green, Murinde, Suppakitjarak, & Moore, 2000).

But the scepticism, at least among mainstream economists, appears more deeply seated. The theoretical and academic value of the flow-of-funds accounts have been doubted early on in their history. David Meiselman in a review of Raymond W. Goldsmith's work on US stocks of wealth and flows of

saving and investment after World War II expressed this scepticism rather nonchalantly:

> 'Yet despite this vast and continuing outpouring of data from the Federal Reserve's flow of funds statistical salt-mill, to the reviewer's best knowledge not a single important substantive contribution to the fields of money, finance and investment behaviour has resulted from the availability of data or from the special accounting format used to assemble and classify figures' (Meiselman, 1967, p. 633).

Such attacks were countered by proponents of flow-of-funds modelling such as A. D. Bain, stressing the importance of flow of funds for policy formulation (Bain, 1973) or Jacob Cohen, highlighting the influence of flow-of-funds analysis on the theoretical thinking of, among others, Gurley and Shaw (Cohen, 1972). Arguably a stronger emphasis on flow-of-funds accounts rather than national accounts (and GDP), for example in economics teaching, could prevent common economic misconceptions about the money circuit.

Anyone who has worked with the flow-of-funds accounts understands intuitively that 'new' money does not enter the circuit merely at the discretion of the central bank. Rather credit money is created by financial institutions in their lending activity. This view on money and credit creation is implicit in the set-up of the flow of funds because money (that is cash but also cash-equivalents, meaning any other financial claims) is not treated as a commodity but as financial claim, generating simultaneously a 'credit' and a 'debit' in each transaction.

There is also no necessary lag between money creation and its effects onto the economy. Therefore, the popular image that inflation is a situation in which too many dollars (or any other currency) chase too few goods is overly simplistic and mostly incorrect. Equally, the notion that hoarding somehow takes money out of the financial system is wrong (Millar, 1996). Hence, the strength of flow-of-funds analysis is that it avoids popular misconceptions about the financial system, which according to J. R. Millar (1996) often rest on a simplistic

understanding of financial transactions visualising the money circuit as the opening of a spigot.

Copeland suggested to counter this misplaced hydraulic analogy by imagining financial flows not as water but as electricity (Copeland, 1952). Instead of a system of pipes and reservoirs the economy works like a network of cables connected to batteries. This image is superior because, for one, electricity moves almost instantaneously and two parties are needed for it to flow between them. Copeland must have been very fond of this analogy since a system of batteries and cables embellishes the inside cover of this 1952 publication.

Apart from avoiding misconceptions, the flow-of-funds framework explicitly introduces economic dimensions which are crucial to understand the workings of the economy, which, however, until recently have often been 'simplified' away. These are: (1) the importance of finance and the inherent link between real and financial transactions. (2) The need to consider stocks as well as flows. (3) The understanding of individual economic units as interconnected balance sheets, which in the economy as a whole result in an interdependence of economic sectors.

(1) Flow-of-funds accounts are the manifestation of the inherent interconnectedness between real and financial transactions in the economy. Crucially, unlike in many other economic frameworks, financial intermediation is central in flow-of-funds analysis. The flow of funds reveal that real economic transactions must always have a financial counterpart because for individual economic entities as well as economic aggregates gross saving and gross investment rarely match. Hence, economic units with a shortfall in receipts need to acquire additional funds, while those with a surplus will use their excess funds for financial investment.

(2) At this point, flow analysis calls for the consideration of stocks and in this way stresses the inherent link between economic flows and stocks. For instance,

an economic sector that experiences a shortfall in receipts (i.e. in sources) over desired spending (i.e. uses) has two options: either to borrow or to run down accumulated saving (i.e. previously undertaken financial investment). The former option stresses the importance of financial intermediation, the latter emphasises the need to account for economic stocks.

(3) Finally, the accounts are built on the quadruple-entry principle. Thus, every economic unit is explicitly understood as balance sheet, an understanding that Minsky later made central to his analysis, as discussed in chapter 2. This means that assets and liabilities are not independent of each other, since one party's asset is another party's liability. In the flow-of-funds accounts, this principle is projected onto the macroeconomic plane. Economic aggregates do not exist in isolation. They are interwoven and depend on each other for their receipts. This is beautifully exemplified in the misguided policy of a budget surplus rule for instance.

Of course, there are also limitations to flow-of-funds analysis. They mostly come in the form of limited data availability, which is connected to a trade-off between detail, on the one hand, and cost and simplicity of use, on the other hand. For this dissertation, the lack of further data disaggregation for the non-financial businesses aggregate constituted a substantial limitation. As mentioned above, the original moneyflow accounts by Copeland distinguished between (1) the industrial sector and (2) business proprietors and partnerships and others. This distinction went some way to account for firm heterogeneity.

In the Kaleckian research tradition it was principally Steindl (1945, 1976[1952]) who pointed towards the crucial difference between large corporations and small and medium enterprises (SMEs). In his analysis the interaction between firms of different sizes accounted for industry dynamics, explaining growth and stagnation over time in an economy as a whole. According to Steindl, economic stagnation occurs in an industry if profit is maldistributed, accumulating mostly with large businesses that reap oligopolistic profits, while

small competitive businesses are suffering low profit margins and growing debt burdens. If such a maldistribution becomes characteristics for the majority of a country's industries, as Steindl believed to be the case for the US since the mid-20th century, general economic stagnation will take hold.

Neglecting the distinction between large corporations and SMEs in the flow-of-funds data, as is usually the case including in the South African national financial accounts, hides the dynamics between small and big business. Hence, what the analysis in the following chapter will address is an aggregate view onto South African non-financial business. This means that even if non-financial firms in aggregate are net lenders in South Africa, which can be observed for the period between the mid-1970s and the late 1990s, there is no information on how this financial surplus position was distributed between large corporations and SMEs.

In fact, it is possible to envisage a situation where due to profit misdistribution both company indebtedness and profit accumulation are rising in tandem, with small non-financial firms running up increasing debt while large corporations acquire growing savings (see Michell, 2014), resulting in rising overall financial fragility. Equally, small non-incorporated businesses are, for lack of better accounting tools, part of the household sector in South Africa. Hence, the financial transactions of small family businesses but also self-employed individuals are part of the household aggregate. The analysis to follow will stress this caveat originating from a lack of disaggregation where necessary, and provide possible interpretations.

A further complication introduced by data availability is the transaction item 'other' in the South African national financial accounts. Financial operations that cannot be subsumed under any other heading end up in this category. This is problematic, especially as transactions in 'other' financial instruments have grown significantly from the late 1990s onwards. In previous decades the position was relatively small, which might explain why 'other' transactions and

the error term were simply merged in the national financial accounts during the entire 1980s. Interviews with relevant SARB officials responsible for compiling flow-of-funds data have found that 'other' transactions in recent years are likely to largely account for financially innovative instruments (Monyela, 2012). This data limitation and its significance will be discussed where important.

To come back to the three questions set out at the beginning of the chapter, choosing the flow-of-funds approach as analytical tool means implicitly replying to question one about the role of financial institutions in the economy. Banks and other financial intermediaries have the ability to create money because money is merely a financial claim, which becomes apparent in the flow of funds.

6.2. Classifying national financial systems using flow-of-funds analysis

The flow-of-funds accounts have been used to answer the question what the role of financial institutions is across different countries. Flow-of-funds data has been consulted in the attempt to categorise financial systems into the popular bank-based versus market-based dichotomy. This section is mainly interested in the method used for doing so (see Mayer, 1988 and Corbett & Jenkinson, 1996, 1997), in order to adjust it for the purpose of analysis in the following chapter. Nonetheless, to ensure a sound grasp of the methodology this section will first (in sub-section 6.2.1.) outline the theoretical argument around the bank-based and market-based categories, then (in sub-section 6.2.2.) move on to highlight the dichotomy's theoretical and empirical shortcomings, before (in sub-section 6.3.2.) outlining the flow-of-funds methodology used for country classification and an adaptation proposed for the purpose of this research.

6.2.1. The bank-based versus market based-financial systems classification

Among economic historians, outside of the economic mainstream and surely in any other social science, the idea that financial systems institutionally differ from country to country and cannot be treated generically as 'finance' is not a

novel insight. Nonetheless, this issue only came to the wider attention of (mainstream) economists during the 1980s.

Gerschenkron's (1976[1962]) *Economic backwardness in historical perspective*, first delivered as a lecture in 1952, is generally regarded to have started the economic literature on differences in national financial systems. Subsequently, prompted by the general perception that industrial investment in Britain was not high enough in the late 1970s, Carrington and Edwards studied the volumes of long-term finance directed towards investment across five OECD countries (Carrington & Edwards, 1979). The five countries in their focus were Germany, France, Japan, the US and the UK. Carrington and Edwards analysed the period of the 1960s up to the mid-1970s.

They found a high degree of integration between banking and industry in Germany and Japan, criticising the Anglo-Saxon tradition of finance as limiting to firm expansion and investment. Heralding the financial trouble the UK and the US were to experience during the 1980s, the duo warned of financial asset inflation, which could be a side effect of an active stock exchange:

> '[I]f a stock market is used as the accredited major source of long-term external funds, the only productive money canalised to the investing community is the amount of the new issue capital. Some financial investment in previously existing shares may occur, thereby inflating paper values and providing a large secondary market for shares and bonds, but this does not assist the would-be entrepreneur or corporate investor to install more plant and equipment' (Carrington & Edwards, 1979, p. 193).

A vigorous debate about the differences in national financial structures and their impact on growth and (socio-)economic change started in the 1980s. Zysman (1983) and Rybczynski (1983) suggested, independently of one another, a classification of national financial systems based on the distinction between market-based and credit-based or market-oriented and bank-oriented economies. Given the changing nature of financial markets especially in the Anglo-Saxon world, Carrington and Edwards' criticism slowly shifted in the course of the debate. The idea started forming that market-based economies

possessed more developed financial markets, which took on a more important role in investment financing. The US and UK economies were perceived to be in this category, while continental (and Western) European countries such as Germany together with Japan had financial systems that were based on large banks, crucially funding investment.

Zysman's work (Zysman, 1983) stressed the level of state involvement and control, which he saw as larger in credit-based systems, which was his terminology for the bank-based model. Thus, whenever conflict arose or institutional adjustment was necessary, this would happen through market mechanisms under the lead of companies in market-based systems. By contrast, in credit-based systems, which Zysman divided into a more state-controlled and a less state-controlled version, adjustments would happen either under the lead of the state, or as result of negotiations between state and other stakeholders, but each time outside of the market.

Similarly, Rybczynski distinguished between bank-oriented and market-oriented financial systems. His categorisation was based on a dichotomy where the bank-oriented system was understood to be a result of and closely linked to government assistance, whereas the market-based system rested on the absence of this assistance (Rybczynski, 1983). More research around the dichotomy of financial systems during the 1980s (see, for instance, Berglöf, 1988), and towards the end of the decade a certain convention established amongst economists.

According to this convention, Japan and Germany are prime examples of bank-based financial systems, followed by other Western European economies such as Austria, France and Sweden among others. The Anglo-Saxon economies, i.e. mainly the US and the UK, but also Canada and Australia, are considered market-based financial systems. A range of stylised characteristics are ascribed to the two different systems.

Loosely following Gerschenkron, bank-based financial structures were understood to have emerged where the state and banks had to act as entrepreneurs, because individual entrepreneurship and development in general lagged behind (see, for example, Rybczynski, 1983). Hence, the level of state involvement in these countries' financial institutions was believed to be high. Banks and large corporations were understood to have close links because bank lending was an important source of investment finance. In consequence, banks were characterised as frequently holding substantial shares in corporations that were their clients. Corporate ownership structures were, allegedly, more concentrated and more stable. Inter-company cross-shareholdings were further identified as typical.

By contrast, market-based financial structures were equated with more developed financial markets, higher levels of competition, and consequently more efficient resource use by corporations, which could be disciplined by a hostile takeover through the equity market. Equity and debt instruments were also integrated into the categorisation, with equity believed to be a common means to raise finance in market-based systems, whereas corporations in bank-based economies would mostly resort to debt financing their investment. South Africa is somewhat of an odd case, often classified as market-based economy due to its historical links to the UK financial system (Andreasson, 2011). Furthermore, the link to the UK financial system was established via British banks and the popular view is that these imperial banks contributed towards the country's development (see Jones, 2009). Thus, the country does not quite fit the classification and is sometimes also seen as a hybrid case (Andreasson, 2011).

While some researchers pointed towards higher stability and growth as result of the more long-term oriented bank-based arrangements (as mentioned in Corbett, 1987), the dichotomy was more often interpreted as one where bank-based systems were more backward, while market-based economies possessed

more developed financial markets. Thus, market-based financial structures could lower transaction and other costs for corporations, thus raising growth. The latter viewpoint is at least implicit in Rybczynski (1983) and explicit in Berglöf (1988).

Classifications inevitably are simplifications, but the bank-based-market-based dichotomy is not just simplistic but, when given a closer look, turns out to be theoretically unfounded and empirically misleading. As Mayer observed these proposed financial system categorisations were hardly based on any theoretical insights. Hence, they were 'usually more of a reflection of the particular prejudice of the investigator than attempts at rigorous testing of hypotheses' (Mayer, 1987, p. iii).

6.2.2. Theoretical and empirical shortcomings of the classification

These interpretations of the emergence of banking in Western Europe appear heavily coloured by the political climate of the 1980s. During those years the Anglo-Saxon countries experienced a substantial change in governance, moving towards market deregulation, liberalisation and generally, a cutback in state provision. At the same time, Western Europe held on to social provision and the larger welfare state, which developed in the aftermath of World War II, for longer. Thus, during the 1980s the state versus market dichotomy must have seemed to be embodied in the contrast between Western European and the Anglo-Saxon economies.

Historically, it would be difficult to argue that a financial system dominated by large banks is necessarily under stronger government control than a financial structure based on more active capital markets. As Gerschenkron (1976[1962]) showed it was not so much banking in general, which was an important impulse to development in Western Europe, but rather a specific type of bank manifested in the French Société Générale du Crédit Mobilier, established by the Pereire brothers in the middle of the 19th century.

The Pereires, influenced by Saint Simon's ideas about the developmental power of science and engineering, established an investment bank with the aim of financing public infrastructure and, according to Gerschenkron, manufacturing. The undertaking failed towards the end of the 19th century but generated so much momentum in French industrialisation that numerous similar projects were started across the continent, imitating Crédit Mobilier. These early developments are the roots of the close link between banking and industry in the European bank-based tradition.

According to Gerschenkron (1976[1962]), the later established universal banks in Germany combined the industrial outlook of Crédit Mobilier with the deposit taking activities of English commercial banks. In this way, universal banks became more stable institutions, not overextending themselves in industrial investment, which was a major problem of Crédit Mobilier.[4]

Historians familiar with German banking criticise Gerschenkron for an exaggerated appraisal of universal banking. During the 19th century, so they argue, only few banks were universal banks. The phenomena really took hold of the country in the early 20th century and later. As consequence, only few companies were actually banked by commercial joint-stock banks. Small and medium-sized enterprises (the *Mittelstand*), which made up the majority of German enterprises at the time, were not. Equally, reconstructing company accounts (for example in the Ruhr area by Feldenkirchen) has shown that large steel producers did not use bank loans as important source of funding for investment (Deeg, 2003).

[4] Gerschenkron's interpretation of the role of universal banks in German industrialisation has come under heavy criticism from (German) historians (see, among others, Deeg, 2003, Fohlin, 1997). They pointed out that the German Crédit Mobilier-equivalents, that is the commercial joint-stock banks, were only one among three major types of banks in Germany of the 19th century. The public savings banks, which mainly serviced state authorities as source of credit, and the cooperative banks, which targeted small and medium-size enterprises (the German *Mittelstand*) and non-urban regions, were the other two important bank types.

Even though these are valid criticisms they miss Gerschenkron's central point: the introduction of industrial banking provided a source of long-term funding for industrial investors, which was not available before. Gerschenkron shares Hilferding's (Hilferding, 1947) belief that it was the emergence of long-term bank loans and banks' underwriting of capital market issues, which transformed businesses investment possibilities. Therefore, it was not important that not all firms benefited from or that not all banks were universal banks. The change in practice, which as Kindleberger (Kindleberger, 1984) documented, also forced established financiers like the Rothschilds to change their lending practices, was pivotal.

Coming back to the bank-based and market-based distinction, not only does history not seem to always square up with the bank-based versus market-based financial systems story, empirical analyses have shown that the conventional classification of countries into these categories also do not hold up scrutiny. As aforementioned, Japan and Germany are typically regarded to be prime examples of markets that possess a strong banking tradition. Thus, the mainstream expectation at the end of the 1980s would have been that non-financial business in both countries prominently uses bank borrowing to undertake investment, and also favour bank debt over equity and bond instruments. Given the financial development narrative, which asserted that financial markets are more advanced in market-based economies, their financial sectors would be expected to be smaller. Conversely, the US and the UK would have been expected to have larger financial sectors and stronger market based financing of corporate investment, i.e. through bonds and equity.

Detailed empirical work showed that many of these distinctions and expectations were not met by reality. It was difficult to identify any clear differences as to the size of the countries' financial markets, for example (see, Berglöf, 1988). The US and the UK had large financial markets during the 1980s, but so did Japan, which was experiencing a prolonged equity price boom at the

time. The expectation that corporations in Germany and Japan (as well as in France and Italy, which were also sometimes included in the bank-based group) had higher gearing ratios, i.e. debt to total assets, in comparison to corporations in the US and the UK seemed confirmed, but measures changed significantly when market valuation of stocks rather than book values were used (Borio, 1990). In consequence, some researchers claimed that the high debt levels of Japanese firms were a side effect of different accounting and statistical standards across countries (see Aoki, 1984).

Others like Mayer (1987, 1988, 1990) were doubtful whether stock measures were adequate at all and suggested focusing on flow data such as the flow-of-funds for international comparisons. What all of these empirical studies (Mayer, 1987, 1988, 1990; Borio, 1990; Corbett & Jenkinson, 1996, 1997) showed was how little market-based finance was actually used to undertake corporate investment. Only during the early 1970s were bonds and equities in the US issued to substantially finance investment expenditure (i.e. accounting for more than 20% of total capital formation). Especially, equity was shown to be a drain on US and UK non-financial businesses funds rather than a source during the 1980s.

Most vigorously, Corbett and Jenkinson (1996, 1997) dispelled any illusions about the bank-based market-based distinction with regard to corporate investment financing. Using net flow-of-funds data, harmonising statistics as much as possible across countries, they demonstrated that there is, in fact, no basis for a so-called market-based classification of financial systems. When counting both bonds and equity instruments, the only country where corporations persistently used market finance over the years 1970-1989 was Japan, a supposed bank-based economy, while non-financial businesses in the US and the UK financed virtually all of their investment internally through retained profits. Market finance was unimportant and, as mentioned above,

turned into a net use rather than a source of funds towards the end of the time period.

Hence, what appears to be left of the financial systems dichotomy, at least with regard to financing corporate investment, are the conclusions that: (1) since the 1970s non-financial businesses have increasingly financed investment internally in major advanced economies. These figures have been recently updated and confirmed by Lapavitsas (2013), showing that in recent years, namely since the early 2000s, retained profits have in fact exceeded non-financial firms' expenditure on gross capital formation. (2) A notable exception during the 1970s and 1980s was Japan, where businesses did use external finance of all sorts for investment outlays (Corbett & Jenkinson, 1996, 1997). This seems to have changed even earlier in Japan than in the US, the UK and Germany. Since the late 1990s, Japanese non-financial businesses have generated retained profits in excess of their capital investment expenditure (Lapavitsas, 2013).

Despite the material blow that empirical analysis inflicted on the bank-based versus market-based categorisation, a similar dichotomy continues to be used by mainstream economists (see Allen & Gale, 2000; Rajan & Zingales, 2001, and for a more recent example, Wolf, 2011). Allen and Gale (2000) accepted that the distinction is not viable on the basis of corporate funding behaviour and went over to looking at household saving. In the US and the UK household saving is to a much larger extent invested in equity than in Germany and Japan. This allegedly justifies holding on to the categorisation.

The terminology sometimes morphed from bank-based to relationship-based and from market-based to arms-length financial system. But the underlying stylised characteristics of the two categories are the same as before, and even the same roots of analysis, namely Gerschenkron's seminal work, are invoked (see Wolf, 2011). One strand of the debate re-emerged within the financial deepening literature (see Levine & King, 1993 and, for an overview, Levine,

2005). Here the focus is on the growth-enhancing impact of financial development.[5]

Another research strand that can be linked to the debate about bank-based versus market-based financial systems is the varieties of capitalism paradigm (see Hall & Soskice, 2001). Here the liberal market economies broadly match the market-based economies, whereas bank-based financial systems are similar to the coordinated market economies in the varieties of capitalism approach. Similar to the research on financial development, the inconvenient empirical findings about firms' sources of finance are overlooked to hold on to the stylised characteristics of bank-based and market-based systems.[6]

Crucially, in neither of the two systems are financial institutions considered to be more than mere intermediaries. Hence, their function is reduced to channelling household saving to corporates in need of external funds for their investment project. Hence, the bank-based versus market-based debate is essentially not about the role of individual financial institutions in the economy. Rather more narrowly, it asks who the major financial intermediary in a textbook economy is.

In the case of South Africa, as will be argued in section 6.3. below, it was neither the financial markets nor domestic banks that importantly financed early industrial development but rather the local mining-finance houses, i.e. South

[5] The World Bank supports this research effort through the publication and maintenance of the so-called Financial Development and Structure database (Beck, Demirgüç-Kunt, & Levine, 2000, and the latest update, Čihák, Demirgüç-Kunt, Feyen, & Levine, 2012). Effectively, what the World Bank database does is construct measures to classify countries into market-base and bank-based financial systems. Two measures are suggested: (1) the Structure-Size measure which is calculated as ratio between stock market capitalisation divided by GDP and bank credit as share of GDP. (2) Stock market value traded to GDP divided by bank credit as share of GDP. Interestingly, none of these measures identifies the UK as particularly market-based economy.

[6] In a recent overview article (Deeg, 2010) on institutional change in financial systems the contradictory empirical data has been relegated to a foot note mentioning Corbett's and Jenkinson's results. The idea that in Germany and Japan businesses use bank loans for investment finance, whereas UK and US businesses favour market finance continues to be propagated.

Africa-specific institutions that developed out of large mining businesses, sourcing their funding from European financiers. In South Africa these mining-finance houses emerged because local financial institutions did not provide long-term finance for mining undertakings, i.e., as the next section will explain in more detail, funding was missing.

6.2.3. A methodology to classify financial systems

At this point an important conceptual distinction has to be introduced: the difference between financing and funding (see Studart, 1995). Keynes differentiated between the two in the following way:

> 'The entrepreneur when he decides to invest has to be satisfied on two points: firstly, that he can obtain sufficient short-term finance during the period of producing the investment; and secondly, that he can eventually fund his short-term obligation by a long-term issue on satisfactory condition' (Keynes, 1937, p. 217)

Hence, the distinction between financing and funding goes back to what Gerschenkron observed as a crucial structural change in Western European banking of the 19th century: the provision of long-term financing; in Keynes's words, the advent of external funding sources for industrial investors.

The industrial investor aims to secure funding because only with long-term financial commitments can he or she be relatively confident of the venture's success. Theoretically, it is possible to finance investment spending short-term by continuously rolling over debt, but that increases the time, effort and risk involved, and is therefore hardly desirable. Apart from absorbing much of the industrialist's time (continuously re-negotiating new short-term loans), any changes in market sentiment and interest rates would impact the conditions he or she is able to obtain. This would significantly reduce the reliability of his or her budgeting.

Within the market-based versus bank-based financial systems debate no difference between finance and funding is made. But whenever sources of corporate investment finance are analysed the implied focus is on funding. For

instance, Carrington & Edwards (1979) believed that German and Japanese financial institutions are superior, because in those countries long-term funding was provided by banks to non-financial businesses of all sizes. In the US and the UK long-term external funding was mostly obtained through capital markets (at least during the 1960s and early 1970s), from which SMEs and also some large companies are excluded (because of high costs). Similarly, Rybczynski (1983, p. 11) stressed that a major difference between 'bank-oriented' and 'market-oriented' economies was the way 'risk capital and long-term debt' are issued. While in the former type of system banks provide funding, in the latter it is capital markets.

The importance of the funding-finance distinction in the context of firm heterogeneity has been stressed by J. Penrose (2015). In an economy where large corporations exhibit a heightened liquidity preference, distinguishing between financing and funding becomes crucial. For a productive non-financial firm, focused on investment activity (to use the terminology proposed in chapter 2: a company that is not over-capitalised) the aim is to transform finance into funding wherever possible. For an over-capitalised firm obtaining finance will be important to manage liquidity. This distinction has important methodological implications for the next chapter.

The debate around market-based versus bank-based financial systems centred on funding, albeit without necessarily spelling this out. However, this explains why the adopted flow-of-funds analysis can legitimately focus on net positions. Of course, using flow of funds and net positions also takes care of some accounting problems. For instance, accounting for stocks of assets and liabilities proved to be a major challenge when comparing the use of financial instruments by non-financial firms across economies. Problems here are manifold. When using companies' balance sheets the figures do not represent national aggregates since large modern corporations are multinational enterprises. Then the question arises whether to use book or market values.

Accounting conventions differ on this question across national borders, impacting recorded company accounts. When using national sectoral data their definitions are in practice not standardised internationally (Mayer, 1988; Corbett & Jenkinson, 1996).

To avoid the problem of stock valuation, Mayer first suggested using flow of funds data to assess the use of financial instruments by non-financial business (Mayer, 1987). The approach has the added advantage that flow-of-funds accounts represent national figures rather than company data, which reaches beyond national borders, spanning multinationals' entire geographical sphere of activity. Corbett and Jenkinson (1996, 1997) picked up Mayer's proposed methodology and documented it in great detail, when analysing the flow-of-funds data for the US, the UK, Japan and Germany in their study.

Using net positions implicitly assumed that the financial operations of non-financial business are exclusively geared towards productive investment. Whatever financial transactions happen they are in place to support firms' investment activity and, therefore, net sources of funds tell the entire story (at least, all that is interesting). Implicitly, Corbett and Jenkinson (1996, 1997) were merely interested in the sources of funding for non-financial businesses. This cannot be held against them, because their sole analytical aim was to debunk the mainstream idea that German and Japanese non-financial firms fund themselves heavily through bank borrowing, while US and UK non-financial businesses take recourse to the capital markets for funding.

Table 6.. details Corbett's and Jenkinson's methodology. Non-financial firms' (NFFs) transactions are classified into gross sources and gross uses of funds, following the structure of the flow-of-funds accounts. The ten listed items are standardised and include: (1) Internal funds, which refers to retained profits, (2) bank loans, (3) new equity issues, (4) bond issues, (5) trade credit received, (6) cash and deposits, (7) equity purchases, (8) bond purchases, (9) trade credit

given and (10) new capital formation. Items 1 to 5 are sources of funds, while 6 to 10 refer to uses of funds.

Of course, they have to be adapted to the specific country's actually reported items. This will be done for South Africa in the following chapter. Net positions for individual financing items are calculated, which are represented in the bottom left column in Table 6.. For instance, bank loans are balanced against cash and deposits held with banks, yielding a net position (item 2 minus item 6 in Table 6.1. on bank assets held by non-financial firms. In this way, net sources for each financial position can be calculated, which in sum should correspond in total to physical investment (item 10) undertaken by non-financial companies in aggregate.

Table 6.1. Calculation of net sources of investment funding by NFFs

	Gross sources		**Gross uses**
1	Internal		
2	Bank loans	6	Cash and deposits
3	New equity issues	7	Equity purchases
4	Bond issues	8	Bond purchases
5	Trade credit received	9	Trade credit given
		10	New capital formation
	TOTAL SOURCES		**TOTAL USES**
	Net sources		**Net uses**
1	Internal		
2-6	Net bank		
3-7	Net equity		
4-8	Net bonds		
5-9	Net trade credit		
	NET SOURCES	10	**PHYSICAL INVESTMENT**

Source: Adapted from (Corbett & Jenkinson, 1997).

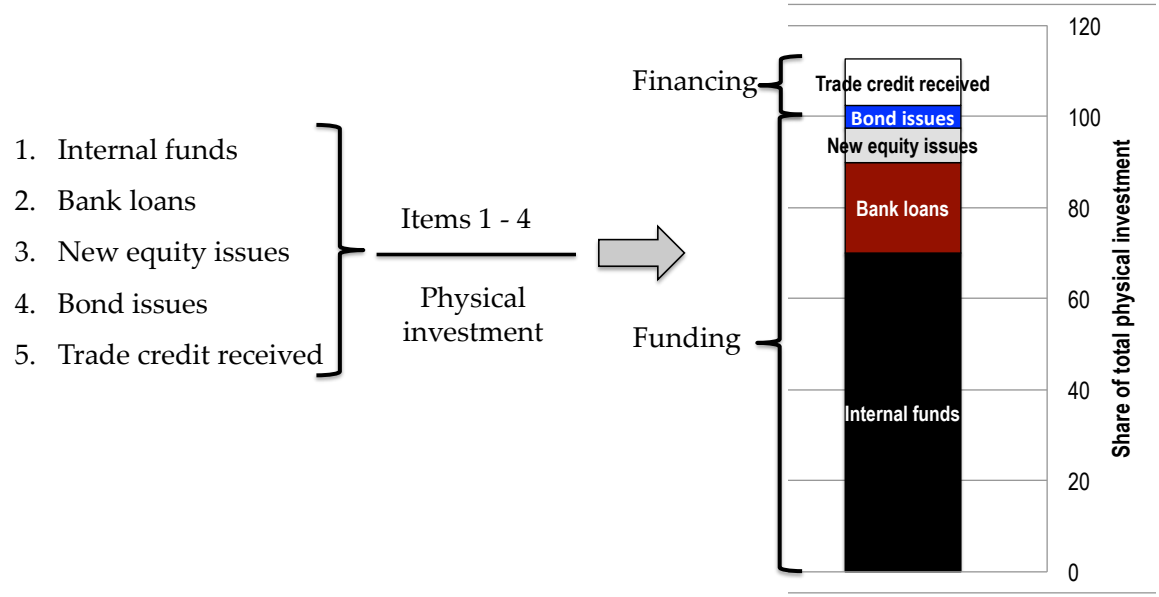
Corbett's and Jenkinson's rationale for focusing on net positions was to eliminate as many sources of potential cross-country discrepancies as possible.

Since they were simply interested in the net sources of corporate financing of investment, i.e. funding, the logical choice was to abstract from gross figures, forgoing that layer of additional information. The question, which they could answer using this method was what type of funding is dominant for non-financial firms. But the question was posed in a mainstream framework that assumed that the main functions of financial institutions were wealth preservation, financial intermediation and, additionally, risk management (this is explicitly mentioned, for instance, in Borio, 1990).

Despite the shortcomings of its exclusive focus on net positions, the methodology presented is useful in establishing net movements of flows. It can shed light onto questions about which sectors are net lenders and which ones are net borrowers. In mainstream theory, households are conventionally attributed the position of net creditor, while non-financial businesses and the government are understood to be the main debtors. Applying Corbett's and Jenkinson's method to South African flow-of-funds data in the next chapter will reveal whether this typology is correct for South Africa, and whether it has shifted over time. The financialisation approach (as discussed in chapter 5) would expect non-financial firms to have become net lenders.

However, netting out sources and uses hides the true volumes of, say, equity issuance and purchases among non-financial firms since merely the difference between sales and purchases is presented, rather than their total volume. This difference can be exactly the same, regardless whether a large volume of transactions was undertaken in a given period or only a very small one. Thus, the full extent of financing by non-financial businesses is hidden. Therefore, this thesis suggests adjusting the Corbett & Jenkinson approach to reveal this crucial layer of detail.

Table 6.2. Relationship between gross sources and gross uses of funds by non-financial firms



To distinguish between financing and funding, it will be calculated how much every individual gross source item (including internal finance, bank loans, new equity, bonds issued and trade credit, that is, the left-hand side column in Table 6..) could cover of the gross physical investment actually undertaken. The amount of physical investment serves as a proxy for the volume of funding needed by non-financial businesses. Adding up the calculated percentages subsequently provides a measure of financing, i.e. a measure of financial sources raised (or retained) for the purpose of financial investment.

Consequently, summing up gross sources of funds and expressing them as share of physical investment will show how large financial investment is because every percentage point above 100% proxies financial investment. Since the specific interest of this dissertation is the South African economy rather than country comparisons, introducing gross figures does not bias the investigation, as was feared by Corbett and Jenkinson (1996, 1997).

This methodology alone will, however, not provide a full picture. It will merely identify the extent of financing for liquidity management among non-financial business. Therefore, as second step the individual financing items on the sources and on the uses side will be traced to identify the major sources and

uses of funds among these companies. For this purpose, the main issuers and main buyers of major financing items will have to be identified. All of this information has been gathered in extremely time-consuming and detailed work for the analysis in the next chapter. These data will constitute the basis for answering the questions about the driving force behind credit expansion and agency.

6.3. A historic perspective on the interaction between finance and non-financial firms in the macro economy

The flow-of-funds accounts were developed and later promoted by a range of (old) institutional economists, first and foremost, of course, Copeland. In the spirit of institutional methodology, this section will provide a historical overview of the relationship between finance and non-financial businesses in South Africa. The overview will shed some light on the question how agency and power relations have played out between these two economic interest groups in the past. This is important since modern institutions in South Africa have not emerged *ex nihilis,* but have a history that moulded them. This section argues that the bank-based market-based dichotomy is not suitable for understanding the South African financial system.

Mining activity was a driving force behind the emergence of capitalism in the colonial territories which were to become South Africa. Diamond and gold extraction here necessitated a large outlay of capital. This capital was mostly sourced in Europe because local banking and financial markets were in their infancy. Hence, in many ways mining gave the impulse for financial development. But the relationship between finance and non-financial businesses in South Africa is more complex. This is best illustrated in the mining groups that developed over time. They are also referred to as 'mining-finance houses' because they typically combine heavy investment in mining claims with large volumes of financial investment.

In contrast to popular perception (Amphlett, 1914; Jones, 2009) local financial markets and both, local and European banks, have contributed little to economic development in South Africa, especially during the 19th century and early 20th century. In fact, it was large South African mining businesses that took on the role of shaping local financial markets, becoming important financial players themselves.

Developments in mining and finance have been going hand-in-hand in South Africa for many years. Nevertheless, it appears that mining often had the upper hand, at least over domestic financial institutions, due to the large volumes of (often highly liquid) financial assets, which the mining groups were able to amass. Especially in the 19th and early 20th century, funding for the mining-finance houses mostly came from European financiers and banks. Here UK-based investors were important but by no means the only financial investors since German and French financiers were also heavily involved (see Innes, 1984; Kubicek, 1979). The sheer amount of funds necessary to get resource extraction on its way (especially deep-level gold mining) meant that these mining groups often commanded larger financial resources than domestic banks and financial institutions, making mining-finance houses powerful financial actors.

This section now reviews the development of the banking sector (in part 6.3.1.), the mining-finance houses (in part 6.3.2.) and the stock exchange (in part 6.3.2.) in South Africa. The aim is to illustrate the way finance and mining developed in the country, with mining always keeping a slight edge over finance. Thus, historically the question of agency and power is answered in favour of South African mining companies, i.e. a specific type of non-financial business.

6.3.1. The historical origins of banking in South Africa

Popular perception links the arrival of British banks and their spread across South Africa closely with the country's development (see Amphlett, 1914; Jones, 2009). The argument is that '[e]conomic develop[ment] followed closely upon

the heals of the banks, not because they caused development, but because they facilitated the process' (Jones, 2009, p. 94). This section argues that banking development in South Africa followed the mining industry, contributing little to actual capital accumulation because funding (rather than short-term finance) was not available until the mid-20 century.

For a long time banking, and more broadly monetary developments, in the territories which were to become South Africa was dominated by their status as colonies: currency was supplied or sanctioned by the colonial powers, permission for the establishment of private banks was sought from Britain and the Netherlands and, once private banking was established, large banking institutions from Europe entered the colonies. In this setting, the large volumes of funding necessary for diamond and gold mining were mainly sourced from European capital markets and banks, rather than locally. A brief overview of the most salient events in the development of South African banking will serve to illustrate this narrative.

Cape Town, where today's South Africa saw its beginnings, was established by the Dutch East India Company in 1652 to serve as stop-over for merchant ships on their way to India and East Asia. Its early financial system was heavily dependent on European colonial powers, which supplied the territory with bullion. Notes were initially prohibited from being issued, due to a belief that paper money would result in inflation and was dangerous for the monetary health of the colony. Due to its geographical remoteness, the local authorities had to resort to the issuance of government paper for the first time when bullion supply was not forthcoming due to the Anglo-Dutch War of the 1780s, however, with the expressed promise to destroy the notes once the shipping of coins was re-established (Arndt, 1928).

The financial difficulties of local authorities paired with re-occurring economic depressions (often linked to troop withdrawals like the departure of the Württemberg Cape Regiment, ordered by the Dutch East India Company in

1790) made it impossible to redeem the promise, because bullion remained in short supply, while notes were commonly used in economic transactions. The prejudice, that local stagnation and high prices of imported goods were caused by imprudent handling of money in the colony, stuck. Explicit opposition to the establishment of any note-issuing institution delayed the formation of private banks in the South African territories markedly (objections to applications for banking concessions are well documented by Arndt, 1928).

Therefore, the first bank established in the region, the Lombard Bank (or 'Bank van Leening') in 1793, was in fact a type of state bank, since it was founded by the Commissioners-General Nederburgh and Frykenius, sent to the colony to improve the economic climate and increase revenue for the Dutch East India Company. The institution operated as a mortgage bank, granting credit to individuals with valuable real property. In 1808, the Lombard Discount Bank was added to the established organisation, discounting short-term promissory notes at an interest rate (Arndt, 1928; Volkskas Limited, 1984).

Despite an invigorating effect of the bank on the colony, the belief that banknotes debased the currency and banking practices were too risky to be undertaken by governments prevailed. Consequently, in 1808 the decision was taken to fade out the Lombard Bank by calling back outstanding loans gradually, while not granting new ones. The Lombard Discount Bank was subsequently terminated in 1843, at a time when, after much government opposition, the first private banking institutions had emerged (Arndt, 1928).

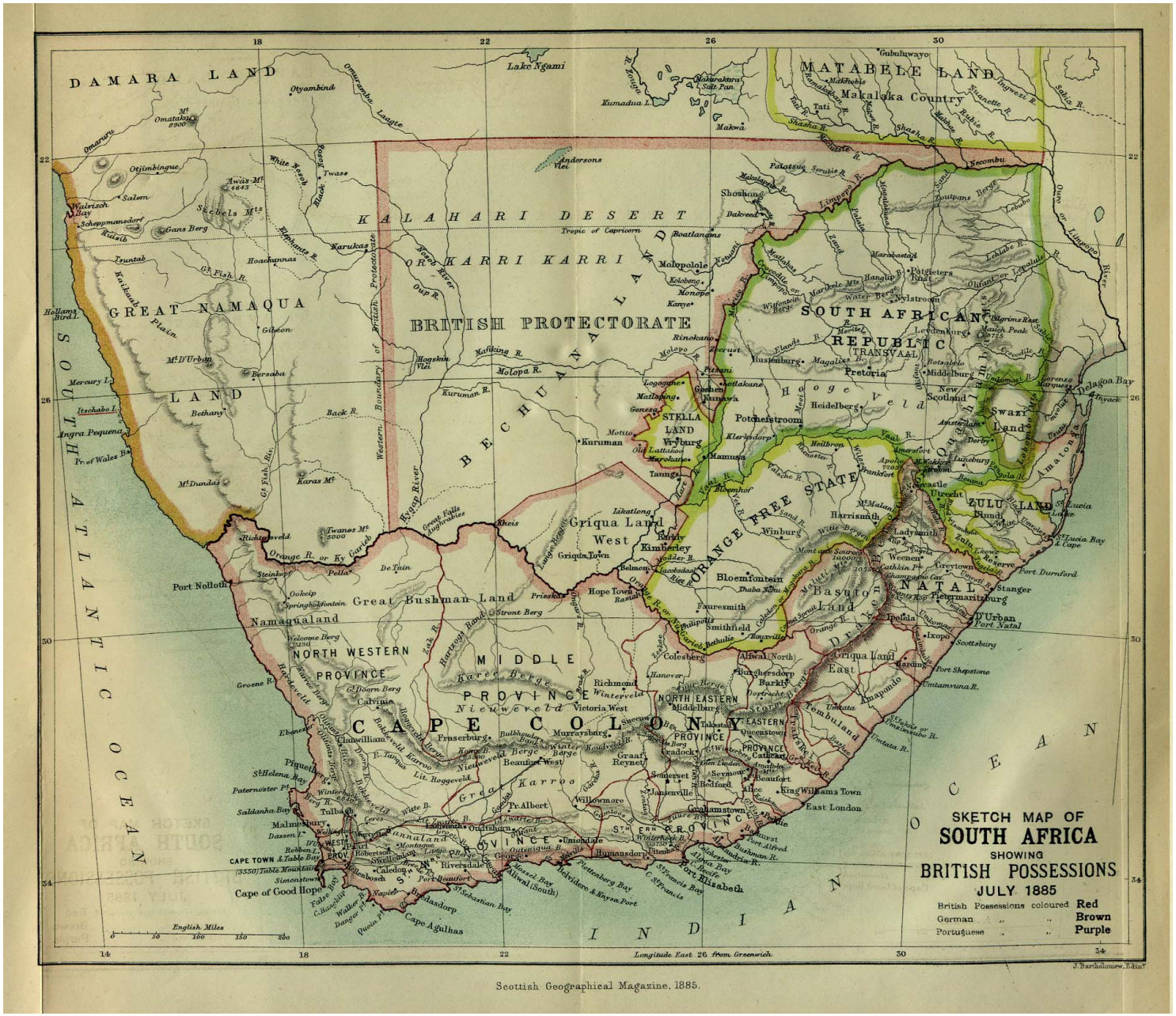
The Cape of Good Hope Bank was the first commercial bank to be founded on South African territory, namely in Cape Town, in 1837. Shortly after, in 1838, the South African Bank was also formed in Cape Town. Both were commercial banks backed by joint stock capital, issued locally and bought by merchants and other well-to-do citizens of the colony. As Arndt (1928) documents in detail the banks' business (according to their founding deeds) was to keep cash accounts and receive deposits, issue and circulate cash notes, discount bills of exchange,

promissory notes and other negotiable public and private securities. They also were to make advances on bullion or goods and other property, deposited as collateral.

Crucially, in the territories which were to become South Africa, there were two main waves of bank formation. The first started in 1838 and lasted until the early 1860s when small local banks were formed, backed by domestic capital. This happened mainly in the British-controlled Cape Colony and Natal. This first wave was followed by the arrival of imperial banks, that is, large banks that were part of European (mostly British) banking institutions, in the Cape Colony. In 1862, the first imperial bank, Standard Bank of British South Africa, started operations in South Africa (Arndt, 1928). The discovery of copper in the 1850s in Namaqualand, leading to a mining and financial boom (Rosenthal, 1968), surely encouraged this influx of imperial banks.

The Dutch settler colonies of the Orange Free State and the Transvaal (the South African Republic since 1852) witnessed a much slower development of banking with the first institutions only cropping up in the 1870s (Arndt, 1928). These territories were sparsely populated by Dutch-origin farmers (the Boer). Thus, trade activity was less vibrant and less geographically concentrated than in the Cape Colony. But the discovery of diamonds in Kimberly, situated at the intersection of the Cape Colony, the Orange Free State and the Transvaal, and even more so the striking of gold on the Witwatersrand (or simply, the Rand) in Transvaal in the 1880s made these areas attractive for banking business. To visualise the geographical dimensions Figure 6.1. shows a historical map of South Africa in 1885, illustrating the British possessions as well as the Boer territories.

Figure 6.1. Historical map of South Africa, British possessions and Dutch settler colonies in 1885



Source: Bartholomew, 1885, provided by the University of Texas Libraries.

The imperial banks, backed by European capital, were significantly larger than local ones. Thus, their arrival prompted an amalgamation move, consolidating the variegated banking landscape in the South African territories. The new arrivals were certainly keen on acquiring local banks, which succeeded in isolated instances. However, local banks mostly strived to retain their independence from foreign banking institutions, perceiving mergers among themselves as the only possibility to compete with the newly arrived opponents. In the end, a series of crises (triggered by financial and mining speculation, such as the crisis of 1881 and the crisis of 1890) pushed smaller banks either into failure or mergers with larger banks (Arndt, 1928), resulting in the almost complete extinction of local banks by the end of the century.

As early as 1926, three big banks dominated the Union of South Africa, namely, Standard Bank, Netherlands Bank and Barclays Bank (Dominion, Colonial & Overseas). Hence, the basis for a strongly concentrated banking sector had been laid early in South Africa. Today, there are four dominant banks. The roots of these 'big four' banks can be traced back to the early 20th century.

The 'big four' are: ABSA, part of the Barclays Africa Group, which is majority owned by Barclays Bank Plc., First National Bank (FNB), which was Barclays National Bank Ltd. until 1986[7], The Standard Bank of South Africa, which originated from the Standard Bank of British South Africa, and Nedbank, which has its roots in the Netherlands Bank.

In the 1880s, when diamonds and gold were found, borrowing from domestic banks was not a viable option for mining developers. Local banks were simply too small to provide the large sums necessary for mining development. They did grant credit against mining claims, that is, against ground that might (or might not) contain gold. Such lending brought local banks into trouble when

[7] FNB emerged when Barclays withdrew from South Africa in 1986 due to increased international pressure on the apartheid regime.

prices for land claims slumped at the end of mining and financial booms, such as in 1881 and the 1890 (Arndt, 1928).

But actual mine development proved to be extremely capital intensive and therefore well beyond the funding possibilities of local banks for both diamond and gold extraction. Mining investors in Kimberley, where the first diamond was found in 1867, were convinced that diamond claims had to be monopolised, in order to ensure the viability of the industry (Innes, 1984). Since diamonds are a luxury good, keeping them in short supply is essential to maintain high prices. Thus, competition would result in over-production in the eyes of diamond producers.

Therefore, the diamond claims in the Kimberley area were monopolised swiftly under the lead of Cecil Rhodes. A consortium of European financiers, headed by the Rothschilds, had to be formed in order to provide the immense amount of funding necessary to buy out other investors in the area, ensuring a complete monopoly. Further funds were required to start actual mining operations, all the while being on the lookout for new diamond discoveries, which would have to be purchased in order to defend the established monopoly position and elevated diamond prices (Innes, 1984).

By contrast, gold production did not depend on monopolised rights because the gold standard to which Britain had adhered since 1816 (and other countries since the mid-19th century) ensured unlimited demand at a stable price. The first finds of gold deposits date back to 1868 at the Olifants River. These deposits were, however, relatively small. Three more discoveries followed during the 1870s, the last one in the Barbeton district in 1875, resulting in a pronounced speculative boom and then crash. But it was not until 1886 that the outcrop of the large gold deposits at Witwatersrand were found. The discovery attracted many small-scale miners, often extracting the gold, which was literally cropping out of the ground, in a one-man operation. In these early years, the

number of mining claims was limited to two per head and non-white miners were not excluded from ownership ('diggers democracy'). Both regulations were to change at the insistence of large mining developers, who made their fortunes in the Kimberley area (Innes, 1984).

Gold mining turned capital intensive when it became obvious that the discovered gold reef was merely the upper edge of a half submerged saucer that fell off steeply into the ground, extending down and South of the initial discoveries. The gold was poor in quality and even the top-layer finds needed to be crushed and extracted using mercury plates. These extraction techniques necessitated some machinery. However, capital requirements shot up even further when deep-level mining and the erection of shafts were undertaken. For this purpose, miners sought to accumulate a number of adjacent ground claims to make shaft sinking more scale-efficient.

Deeper-level gold was even poorer in quality, it transpired by the late 1880s, causing the 1890 crash. The hauled up gold was not oxidised, but covered by pyritic crystals preventing the familiar mercury plates technique from working effectively. A different chemical procedure was invented to take care of this complication: the MacArthur-Forrest process or gold cyanidation. This process proved highly efficient, but once again heavy machinery was required for its implementation (Feinstein, 2005).

Thus, during the early years of diamond and gold exploration funding large-scale mining investment and especially development simply went beyond the possibilities of local banks. But even the larger imperial banks operating in the South African territories could not be of help since most of them (with the notable exception of Standard Bank which arrived in 1862) only started their operations during the 1870s or later. At that point the diamond boom was already in full swing.

But even subsequently South African banks might have been reluctant to provide mine funding. Since the banks present in South Africa operated in an English tradition they did not engaged in much long-term lending. This made it difficult for mining investors to obtain funding for their ventures. Long-term lending among South African commercial banks was only championed in 1948 by Netherlands Bank of South Africa, providing industrial funding through its subsidiary Netherlands Finance and Investment Corporation in a move to diversify and enlarge its product and client base (Verhoef, 1992b).

Historically, South African banking forms part of the Anglo-Saxon tradition and is therefore often classified as a market-based financial system according to the categorization controversy discussed in the previous section. Only the Volkskas established as cooperative bank during the 1930s somewhat resembled a German-style universal banks of the 1920s between 1968-1980 when it acquired (and later sold) substantial industrial interests, which made up 80% of its assets by 1980 (Verhoef, 1992a). This was, however, in a move to promote the engagement of white Dutch-origin South Africans (so-called Afrikaners) in business. Until the mid-1960s, when Anglo American sold a major stake in a leading mining-finance house to the Afrikaner financial services group, SANLAM, Afrikaner ownership of mining was marginal (Feinstein, 2005). Due to rivalry between Afrikaner and British capital, it would have been unlikely to see mining development be financed by institutions like Volkskas.

Commercial banks dominated the South African banking sector until the 1950s. Aggressive competition for market share from other financial institutions such as building societies and hire purchase banks during the 1960s was facilitated by strict government controls of commercial banks' credit expansion, aimed at containing inflationary pressures. These measures had little effect since they disregarded the money-creating abilities of other deposit-taking institutions.

Competitive pressures made the move into industrial financing necessary for commercial banks.

At this point the mining-finance houses were well established, often held substantial shares in big banking groups, and in fact were pushing for the deepening of local financial systems, as the case of the Anglo American's initiative to set up a South African money market will demonstrate (in section 6.3.3.). Hence, while South African banks were unable and unwilling to provide large-scale funding for mine development in the early years (when European investors were important) and until the mid-20th century, their assistance became less crucial subsequently due to the strong financial position large mining companies had secured by the 1950s: They had become mining-finance houses and as such they could finance much of their investment internally.

6.3.2. The historical origins of mining-finance houses in South Africa

Mining-finance houses in South Africa are company groups with interest and expertise mainly in mining and finance. In the course of the 20th century, the mining-finance houses diversified increasingly into manufacturing and services, forming company groups. The distinct feature of these South African groups was their complex ownership structures (so-called pyramid structure holding companies), which allowed the main owner (often a family, like the Oppenheimers in Anglo American) to control a large number of business assets with a relatively small ownership share (Barr & Kantor, 1994).[8]

Historically, they emerged during the late 19th century when both engineering knowledge and financial backing from large investors in Europe were essential to bring successful mining operations into production. These mining-finance

[8] In South Africa the practice of issuing non-voting shares was not common until the late 1990s. Hence, in order to retain control but increase equity capital layers of holding companies were established. Ownership could then be diluted without forgoing control. Gerso & Barr (1996) show that the Oppenheimer family controlled Anglo American in the 1990s with an ownership share of 15%. The Rupert family's ownership in Rembrandt even fell to 1.5% without endangering their control.

houses were, therefore, not so much holding companies but rather a specific form of conglomerate, offering specialised services to all their subsidiaries. During the first big wave of gold mining in Witwatersrand, that is when the Central Rand mining interests were established and mined between 1886 and 1914, ten big mining groups emerged along with some smaller ones, which were to grow during the second wave of development, when claims on the Far East Rand were consolidated.

These 'big ten' were (1) the Corner House, led by Wernher, Beit & Company and Eckstein & Company, (2) Cecil Rhodes's and Charles Rudd's Consolidated Gold Fields, (3) the Bernato group, (4) Joseph Robinson's Robinson group, (5) George Ferrar and associates, (6) George Albu, or General Mining, (7) A. Goerz & Company, (8) S. Neumann & Company, (9) Lewis and Marks partnership and (10) Abe Bailey interests (Kubicek, 1979). There were also a number of smaller mining groups, which over time were bought up or disappeared otherwise, with the notable exception of Anton Dunkelsbuhler whose speculative investment in Far East Rand claims in those early years were to become the basis for the Anglo American empire (Pogue, 2000).

The stories of the 'big ten' are important, since they illustrate the complex relationship between mining and finance within these groups. Many of them such as the Corner House or Consolidated Gold Fields were involved in the development of the diamond mines in Kimberly. The Corner House, or its predecessor Jules Porges and Company, made a fortune from selling substantial claims on diamond grounds to the investor group around Cecil Rhodes. This enabled the group to invest in gold claims on a large scale, becoming the largest gold producer in South Africa by the early 20th century. Their share of South African gold output was 37% for the years 1902-13, translating into 11% of global output (Kubicek, 1979).

While using the equity markets in South Africa and Europe to generate profits (rather than raising funding), the Corner House also emerged as first large undertaking to focus seriously onto mine development rather than the speculative phase of exploration. Therefore, Kubicek (1979) identifies the Corner House, which later became Rand Mines, as the first mining-finance house to emerge. Their development efforts are best illustrated in the pioneering push for deep-level gold mining during the 1890s. The funds needed for this move were so enormous that the Corner House only put up half of the sum, while involving European investors (approaching those who also invested in the earlier diamond venture) and even local rivals like Consolidated Gold Fields in funding the other half.

Consolidated Gold Fields emerged as main rival to the Corner House, however only becoming a serious mining-finance house by 1900. Rhodes and Rudd established the company in 1887. But their activities during the first three years of the company's existence were purely financial. They managed to double the undertaking's capital and even declare dividends on the back of successful equity market speculation with gold and diamond shares (Kubicek, 1979).

After 1894 Consolidated Gold Fields turned more towards actual mine development, also cooperating with the Corner House. The group subsequently purchased and developed important mines such as the Simmer & Jack mine, Sub Nigel and the Village Reef Mine, which have all been active until recently as documented in chapter 4. In 1899, the group issued debentures for what was to become one of its most profitable mines, the Robinson Deep. Hence, by 1900 the main focus of the group was mining operations, making it a mining-finance house rather than a finance house speculating in mining shares, which it used to be in its early days.

The Bernato group, the Robinson group and Ferrar and associates became all well known for their speculative involvement in mining. A recurrent practice

among the ill-reputed mining groups was to float mining companies and allocate individual partners of the group share packages below floating price. These could then be sold lucratively when share prices increased during a boom. Joseph Robinson's speculative activity was so outrageous that even his fellow mining investors (and speculators) despised him, blocking him from a peerage in the House of Lords in Britain. Robinson, for instance, overcharged Solly Joel of the Bernato group for mining interests so excessively, that the latter took him to court over it in 1916. Of the £4.5 million pounds selling price Solly Joel was able to recover £500,000 (Kubicek, 1979).

Thus, speculative mining groups tended to focus on exploration while investing very little in actual mine development and extraction. Speculation was possible due to exploration risk, which made the assessment of mineral deposits in a given piece of ground at the best an educated guess. Importantly, Bernato, despite or maybe because of its highly speculative investment strategy, managed to outstrip both Rand Mines and Consolidated Gold Fields in terms of gold production by 1913 (Kubicek, 1979). The basis was their early (and once again speculative) investment in Far East Rand mining claims. Coincidentally, speculative investment in the Far East Rand was also the foundation for the Anglo American empire. Once, again this illustrates the close link between speculation and production in the mining industry. Large pools of capital were useful for both, but essential for the latter.

From the 'big ten' mining-finance groups six large company groups emerged in South Africa after World War II (and not all of them were rooted in mining) to control the majority of business interested listed on the JSE. These six groups were Anglo American, SANLAM, Liberty Life, Rembrandt (later: Remgro), SA Mutual (later: Old Mutual) and Anglovaal (Roberts, 2004). Their dominance within the South African economy stemmed, on the one hand, from their size and ability to invest on a large scale. On the other hand, the concentration of business interest in the country was accelerated during the 1960s when capital

controls were introduced with the aim of stopping domestic capital from flight. This situation was exaggerated when international corporations started withdrawing their investment from South Africa during the 1980s, when international sanctions were finally imposed against the racist apartheid regime.

With the end of apartheid in the early 1990s, the groups came under pressure to 'unbundle', meaning to break up their extremely large conglomerate structures, because simplifying pyramid ownership structures would allegedly make their shares more attractive to foreign investors.[9] Breaking up these large conglomerates also appeared to hold the promise of less concentration and more dynamic competition for the South African economy.

In the process of unbundling the company groups reduced their degree of activity diversification, focusing on their core businesses. Many of them – such as Anglo American in 1999 – used the opportunity to move their primary listing from the JSE to either the London Stock Exchange or the capital market of some other OECD country. It is doubtful whether the promised increase in competition and foreign direct investment (which allegedly would flow into South Africa once the big groups could source capital cheaper abroad) ever materialised (Chabane, Goldstein, & Roberts, 2006).

Looking at the historical evolution of the mining-finance houses this recent development is maybe not overly surprising. The early mining groups, at least the large ones, already embodied a global outreach (rather than a dedication to South Africa as the centre of operations) and a wish to reduce risky investment in a potentially politically unstable environment. The wish to reduce their risk stem, on the one hand, from the inherently risky nature of gold exploration but equally, on the other hand, from the politically unstable situation in the

[9] Barr & Kantor (1994) argue that there is no evidence of higher profitability, which would increase the groups' attractiveness for investors.

Transvaal where Afrikaner and British interests clashed, resulting in violent conflict. This made mining (and property) rights uncertain. Thus, the Corner House, for instance, held £1 million worth of low-risk financial investment (mainly government bonds) in London around the turn of the century, alongside real estate, interest in cement and public utility companies in the Transvaal and other mining interests on the American continents (Kubicek, 1979). But the financial power that the mining-finance houses held in South Africa is best exemplified in the establishment of the local money market in 1955.

6.3.3. The historical origins of capital and money markets in South Africa

Anglo American gave the impulse for a local money market to emerge in South Africa (through the foundation of the first merchant bank, the Union Acceptances Ltd.) in 1955 (Laight, 1982). But money markets provide short-term lending, whereas during the diamond and gold rush it was large long-term finance, which was needed. Here, local equity markets could help somewhat.

The first recorded security dealings in South Africa go as far back as 1782 (Rosenthal, 1968). The discovery of diamonds in Kimberley in the late 1860s, prompted the establishment of a stock exchange there, which became the financial centre of the South African territories. At the time, there was another important stock exchange in Pietermaritzburg. The 1880s provided for an interlude at Barbeton, where a gold rush started in 1883, triggering the establishment of two security exchanges. Both were, however, closed once the gold boom in the area came to an end in 1890 (Andrews & Kok, 1984).

Today's stock market in the country, the Johannesburg Stock Exchange (JSE), has its origins in the gold finds of 1886 in Witwatersrand. Poor communication links because of the geographical distance between the Rand (which is in the Transvaal, see Figure 6.1) and Kimberley made the establishment of a local exchange in Johannesburg essential. The Witwatersrand Club and Exchange

Company Limited announced in 1886 is often named as predecessor of the JSE (see, for instance, Andrews & Kok, 1984 and Goldie-Scot, 1996) which was established the following year. However, according to the Committe of the Johannesburg Stock Exchange (1948) there are no records proving that the Witwatersrand Club was ever established. Since 1931, when the Pietermaritzburg Exchange closed its doors, the JSE has been the only stock exchange in South Africa.

As discussed in part 6.3.1., it was the major European stock markets that helped to raise much of the funds needed to develop the South African mining industry. Kubicek (1979) estimated that South African mines absorbed between £116-134 million during the period 1886-1913 alone. To put this into perspective, the amount equates to three times as much as Canadian and Australian mines received and to about half the sum the public and private sectors in Argentina were able to raise together in those years. Nevertheless, some (much smaller volumes of) funds were obtained locally through the JSE.

Until British Company Law was introduced in the Transvaal, when the colony fell under British rule during the Second Boer War (1899-1902), local regulations were so lax that many dubious mining investors, such as Joseph B. Robinson of the Robinson group, preferred to set up business in the Transvaal and seek finance locally. In fact, Robinson started his gold mining enterprise, which became one of the 'big ten' mining houses present around the turn of the 20th century, through a loan he obtained from Alfred Beit, a leading member of the Corner House, the most well-reputed mining group in those times (Kubicek, 1979). However, a large number among these 'big ten' used the JSE to generate speculative gains during stock market booms, which were a frequent phenomenon during these early days of diamond and gold discovery.

Nonetheless, the large mining-finance houses that developed in the 20th century all made their fortunes through actual mining activity. In the course of their

development they became so big that their financial power rivalled (and often exceeded) that of many local financial institutions. The Corner House, for instance held £1.17million in low-risk financial assets with Union Bank of London at the beginning of the last century. This was in addition to its rich deep-level gold mines in South Africa, a smaller portfolio of local property holdings and manufacturing interests and significant global investment into diversified mining and other primary commodity extraction claims (Kubicek, 1979).

Their financial power and influence was exemplified in the Corner House group's involvement in supporting the formation of a national bank in the South African Republic (or the Transvaal). After ten years of abortive negotiations with a range of different potential investors, it was Eckstein & Company (part of the Corner House), which helped Kruger's government to raise £4 million capital (taking part of the interest out themselves) in Europe, so that the bank could finally be established in 1891 (Arndt, 1928, Kubicek, 1979). This episode exemplifies the financial power and influence, which these groups accumulated over time.

Anglo American, founded in 1917 and the largest modern-day mining-finance house is another example. In 1955, Anglo American organised and financially stemmed the establishment of the first merchant bank in South Africa, the Union Acceptances Ltd. Almost 80% of the capital was provided by the company and other companies that were part of the Anglo group, such as De Beers. Similarly, the head of the bank was appointed by Ernest Oppenheimer, on the basis of being a close ally, rather than due to skill or merit (Jones, 1992). Hence, the influence of these groups (also based on their financial might) ran deep into the financial sector of South Africa.

The establishment of Union Acceptances triggered further creations of merchant banks by other financial institutions and also discount houses. Hence,

Anglo American by no means single-handedly created the South African money market. However, it provided the crucial trigger for it. And this trigger appears to have been importantly motivated by the company's own cash flow position, which at the time it desired to invest in South Africa rather than the London money market as was practice until then. Hence, in Stuart Jones's words:

> 'Endogenous factors, however, were even more important [for the establishment of Union Acceptances]. […] the Free State gold-fields, in which Anglo American occupied a commanding position, were about to come on stream and produce a greatly enlarged cash flow for the group' (Jones, 1992, p. 155).

Apart from Anglo American-controlled Union Acceptances, four other private merchant banks were established in South Africa during the 1950s and '60s. These were Central Finance and Acceptance Corp. backed by the SANLAM Group, the Accepting Bank for Industry in which the state-owned Industrial Development Corporation had a 40% stake and the Philip Hill Acceptance Co., wholly-owned by Philip Hill, Higginson, Erlanger's Ltd (Innes, 1984).

Hence, the mining-finance houses were powerful financial actors due to their financial expertise, but more importantly, because of the large financial funds they held, and the links to financial institutions abroad they were able to build. These three assets gave the mining-finance houses the upper hand over South African financial institutions.

6.4. Summary and conclusion

This chapter set out the flow-of-funds methodology, which is used in analysing the South African economy in the next chapter, with the aim of answering the questions about (1) the role of financial institutions in the economy, (2) the driving force behind credit expansion and (3) the agency (or power) in the relations between finance and non-financial business. In economics, the bank-based versus market-based literature attempts to account for institutional differences in financial markets across countries, addressing question (1) about

the macroeconomic role of financial institutions. However, the literature implicitly presumes that the function of both, banks and capital markets, is to channel household saving to corporates in need of external funds for their investment project. Hence, the bank-based versus market-based debate is essentially not about the role of individual financial institutions in the economy. Rather more narrowly, it asks who the major financial intermediary in a textbook economy is. The bank-based market-based dichotomy is of little use in understanding the development of South African finance. Here, the mining sector, hence a specific part of the non-financial corporate sector, was instrumental in shaping domestic financial institutions. This historical experience cannot be captured by the simplistic dichotomy used in economics to classify financial systems.

In contrast, the mere use of a flow-of-funds approach, if true to its (old) institutionalist origins, implies the recognition of financial institutions as money creators rather than mere intermediaries channelling household saving to non-financial firms. Thus, flow-of-funds analysis is chosen to answer questions (2) and (3) in the subsequent chapter. Some preliminary answers to these questions have been given in this chapter:

The historical overview of the origins of South African banking, mining-finance houses (which were the main businesses in search of funding in the early days of the South African colonies) and the stock exchange illustrate that finance and non-financial businesses have always been closely intertwined in the country. However, mining interests, in the shape of the mining-finance houses, were able to establish themselves as a dominant economic force in the country and also as powerful financial actors. Hence, the question of power in the relationship between financial institutions and non-financial corporations is historically answered in favour of mining businesses, a specific part of the NFF sector.

Chapter VII: The Macroeconomic Impact of Non-Financial Firms Financial Operations

This chapter will identify the impact of non-financial firms' financial operations on the macro economy, using South Africa as case study. The macroeconomic level of analysis is important, because economic entities such as non-financial businesses do not exist in isolation. Chapter 2 discussed the nature of non-financial corporations' financial operations from both firm and industry perspectives. Here, it became clear that for mainstream economic analysis the non-financial corporations' motivation to hold liquidity had to be found within the firm, namely, in either of the three motives of liquidity preference examined: the transaction, the precautionary or the speculative motive. Such a reductive approach neglects that non-financial corporations as a group constitute an economic aggregate. Crucially, as a sector they interact with other aggregates in the economy. This is illustrated in the so-called sectoral balances, i.e. the financial positions of the different macroeconomic aggregates.

The sectoral balance is the difference between a sectors' gross saving and its gross investment for a given time period. If an economic aggregate generates more saving than it invests its financial balance will be positive, meaning that the sector is a net lender. Conversely, if a sector has investment expenditure that exceeds savings, the financial balance is negative. The aggregate is a net borrower.

Mainstream (textbook) economic theory assumes that non-financial firms and the government are net debtors in aggregate, whereas households as a group are perceived to be net creditors (Mishkin & Eakins, 2012). Net (rather than gross) financial positions are typically considered, identifying surplus and deficit sectors in an economy and visualising the direction of financial intermediation. Examining the aggregate behaviour of non-financial firms

(rather than their isolated micro behaviour) can shed light on the reasons for their rising liquidity holdings. Therefore, this chapter will use sectoral and flow of funds analyses, stressing the interconnectedness of macroeconomic aggregates.

The chapter is organised as follows: First (in part 7.1.), the structure of the South African National Financial Accounts (NFA) will be discussed, which provide the necessary data for this chapter's analysis. In section 7.2., the sectoral balances as provided by the NFA will be examined. While sectoral balances are typically considered in net terms, here both will be considered, net and gross financial positions.

Analysing flow of funds data for the years 1970-2013, this chapter finds that (1) the South African government has attempted to shrink its net borrowing position since the mid-1980s (that is, since the onset of neo-liberal reforms aimed at deregulation and state reduction); (2) households' net creditor position has been eroded since the 1990s; (3) the sectoral balance of private-sector non-financial firms moves in tandem (and inversely) to the financial balance of the rest of the world, illustrating the strong international orientation of South African corporations.

Since the focus of the chapter is the impact of non-financial businesses' financial operations in aggregate on the South African economy as a whole, the chapter will proceed to investigating the sources and uses of non-financial companies' funds (in part 7.3.). The results of this investigation have to be seen against the background of the orthodox and heterodox economic theory discussed in chapter 5.

Mainstream economics expects non-financial corporations to be a net debtor in aggregate, receiving credit generated by financial intermediation out of household savings. The better the intermediation functions, the higher investment and growth rates will be. In contrast, much of heterodox economic

theory – especially that closely linked to Marx's and Keynes's thought – predicts productive credit to be created either out of idle money hoards, or *ex nihilis* by banking institutions to serve the investment needs of non-financial corporations. The financialisation literature – the pinnacle of modern heterodox thought on finance – often predicts either a shift of non-financial firms' financing behaviour from banks to capital markets as major source of funds, and/or an increase in their financial operations, which allegedly happens at the expense of productive investment. This then explains the tendency towards lower economic growth and a declining investment rate.

According to the mainstream view, South Africa's relatively deep financial markets should be a development success (Jones, 2009). The absence of this success is puzzling for mainstream economists (Eyraud, 2009), while it makes South Africa a prime example of a financialised emerging economy for heterodox writers (Ashman et al., 2011; Ashman et al., 2013). This thesis argues that South Africa's financialisation story is a more complex one. The mainstream view can be refuted. In contrast to popular perception (Amphlett, 1914; Jones, 2009), the South African financial sector, and especially the big banks, did historically not contributed to the country's economic and industrial development because long-term funding was not made available. South African non-financial companies financed much of their investment internally, especially during the second half of the 20th century, as this chapter will show. But equally the heterodox argument misses out on layers of complexity by lazily accusing large South African NFFs of financial speculation that emerged as consequence of the country's financialisation since the mid-1990s. In fact, NFFs always invested heavily into financial instruments in South Africa. Crucially, NFFs changed (rather then intensified) their financial investment strategies in the course of the 1990s, shifting away from trade credit towards active liquidity management. Thus, this thesis reveals the mechanisms behind

the heterodox 'gut feel' that finance in South Africa is not contributing towards investment and employment creation, but rather weakening the local economy.

This chapter will show that in South Africa borrowing and lending do not necessarily follow the orthodox economic model. While the government sector has been a net debtor (as mainstream theory would expect), this is not always true for non-financial companies, which are the other main deficit sector in the economy, according to the textbook approach. During much of the 1980s, corporations ran large financial surpluses in South Africa. Non-financial businesses then used these surpluses to provide credit for household consumption and, potentially, business activity of small (non-incorporated) firms. Hence, as far as household credit goes, non-financial companies figured as financial intermediaries, which is at odds with mainstream theory in which financial institutions (banks and capital markets) take on the role of financial intermediaries.

The New South Africa is labelled as increasingly financialised (Ashman et al., 2011). There are different interpretations of the financialisation of NFFs. One view is that NFFs increasingly undertake financial speculation instead of productive investment (see Ashman & Fine, 2013, for South Africa; and Orhangazi, 2008, for the general argument). Another view is that NFFs turn away from bank-based finance towards financial markets as main source of financing (see Aglietta & Breton, 2001; Lapavitsas, 2009; Lapavitsas, 2013). Neither of these interpretations fits the South African case, exposing the overly simplistic understanding of NFFs' financial activity in much of the financialisation literature.

Crucially, in South Africa NFFs have shifted the bulk of their financial operations from providing trade credit to purchases of more liquid financial assets. The importance of financial operations for non-financial firms has not increased over time. Similarly, bank credit has not been replaced with capital

market lending for investment purposes. Hence, while non-financial firms in South Africa are increasingly investing into innovative financial assets, it would be incorrect to speak of their increased financialisation. If anything, South African non-financial corporations have always been highly financialised. It is merely the type of their financialisation, which has changed over time.

Non-financial firms in South Africa raise a substantial amount of their liquid funds from the foreign sector. Part 7.4. will show that these funds are then channelled into the South African banking sector. An analysis of the four major South African banks, which cover around three quarters of loan extensions in South Africa, shows that while banks have increasingly relied on corporate deposits over the past two decades, their loanbooks have experienced a shift towards mortgage loans. Among corporate clients credit extension to finance, insurance and real estate (FIRE) businesses has been the highest since the late 1990s at least.

These changes have gone hand in hand with, and have arguably encouraged, the inflation of the South African real estate market. In this way the amplified corporate liquidity preference among South African non-financial firms discussed in chapter 4 has facilitated asset price inflation in the country's housing market, because liquid funds deposited with South African banks are channelled into mortgages and business credit for the FIRE industries.

Tracing the flow of funds in this way shows that non-financial firms can shape the behaviour of financial institutions as theorised by Kalecki and many of his German contemporaries. This chapter argues that NFFs decisions not to invest into productive capital but to hold on to financial investment can also facilitate credit extension, since banks now extend credit to households and financial companies (and finance-related firms, such as real estate businesses) in their search for assets to balance liabilities owed to non-financial firms.

7.1. The structure of the South African National Financial Account

Each economy can be understood as an organic whole composed of four sectors: (1) the government sector, (2) households, (3) non-financial companies and (4) financial institutions. These four interact among each other and with a fifth aggregate, namely (5) the rest of the world. To preserve a logical structure, the sectoral analysis presented in this chapter will always follow this order, starting with the government balance, moving across the private sector aggregates to consider the foreign sector last.

The National Financial Accounts (NFA) link real activity with financial transactions in the economy, and this link is the focal point of this thesis. In South Africa, flow of funds analysis and data compilation was pioneered by B. Van Staden in 1962 (H. B. Falkena, Fourie, & Kok, 1984). Since the 1980s the South African Reserve Bank (SARB) has compiled flow-of-funds data in the form of the NFA, which is regularly published in the SARB's Quarterly Bulletin. Thus, flow of funds data are available going back to 1970.[1]

The NFA are set up as tables with columns representing different economic aggregates and sub-sectors, whereas rows provide transaction items. The latest flow-of-funds table (for 2014) is provided in the appendix (Table A.2.). The SARB has been providing quarterly flow-of-funds data since the 1990s. The analysis to follow will only use annual data to take advantage of the longer data series.

Flow-of-funds data are provided for the following macroeconomic aggregates, which are covered in the columns (SARB, 2011):

[1] Since 1982 the SARB Quarterly Bulletins have regularly included flow-of-funds data, covering the years 1980 until today. Data for the period 1970-1979 was published in the supplement to the SARB Quarterly Bulletin for December 1994. That issue also introduced quarterly flow-of-funds data, which since have been provided by the SARB alongside annual NFA figures (SARB, 1994).

- General government with its two levels: (1) central and provincial government and (2) local government
- Households and others.
- Non-financial corporate business enterprises, subdivided into (1) public non-financial corporations and (2) private non-financial corporations
- Financial intermediaries, including: (1) the monetary authority, (2) other monetary institutions, (3) the Public Investment Corporation, (4) insurers and retirement funds and (5) other financial institutions and
- Foreign sector.

The entities making up part of the financial intermediaries sector require a more detailed explanation. The monetary authority sector comprises the SARB and its subsidiary, the Corporation for Public Deposits. The SARB is legally a private institution with shareholders other than the South African government. This is a historical remnant and has not been altered, unlike in many other countries (but similar to the United States, for example, SARB, 2015e).

Other monetary institutions cover the accounts of banks, mutual banks, the Land Bank and the Postbank. The Public Investment Corporation is the fund manager of public-sector entities, including official pension and provident funds, social security funds and other government funds. Finally, other financial institutions are non-bank financial institutions, such as collective investment schemes (unit trusts and participation bond schemes), trust companies, finance companies and public financial enterprises that invest funds on behalf of their clients. It should also be noted that the sector 'households and others' refers to households in aggregate, but importantly also pick up all remaining unclassified entities such as non-incorporated businesses or not-for-profit organisations (SARB, 2011c). As discussed in section 3.3.1., informal economic activity accounts for a substantial share of the South African economy, and this was even more so the case in the past when informal businesses were either discouraged or simply not allowed to formalise.

The top part of the flow-of-funds table shows the national income (and production) accounts, providing sectoral data on net saving, consumption of fixed capital, capital transfers and gross capital formation. The first two items (net saving and consumption of fixed capital) add up to gross saving. This is the real activity part of the economy. The difference between gross saving (together with capital transfers, which are typically small) and gross investment, results either in a net lending (+) or net borrowing (-) position for each of the listed sectors. The difference is shown directly below the real activity account. This is followed by a breakdown of the financial liabilities and financial assets each sector has incurred and accumulated over the period in question, which sums up to the financial balance of each sector.

The methodological framework used for these calculations is similar to the one suggested by the International Monetary Funds (IMF) in the System of National Accounts. However, the SARB uses the balance sheet approach rather than the transaction approach to calculate financial flows. The former calculates flows from the changes in the balance sheet positions of institutions (de Beer, Nhlapo, & Nhleko, 2010).

Of course, the balance on a sector's real account has to be met by its financial account balance. Thus, if an economic aggregate (say households) generates net saving, it will acquire financial assets, yielding a positive financial balance. Conversely, a deficit sector (say the government) will have to incur financial liabilities to balance its net debtor position. The lower half of the table provides the types of financial liabilities taken out and the types of financial liabilities acquired by each sector in aggregate. The different transaction items are specified on the rows. There are 24 different financial instruments listed in the latest NFA tables. They will be discussed in more detail further below.

This is then a flow analysis of financial sources (S), i.e. the net increase in liabilities at transaction value, and financial uses (U), meaning the net increase

in assets at transaction value. Both S and U can be either positive or negative. A positive entry under sources means that new financial liabilities were taken on, while a negative entry represents the paying off of past liabilities. A positive position under uses reflects the increase in financial assets acquired by a sector in aggregate, while a negative position means that assets have been disposed of, reducing the overall stock of assets held. Therefore, flow analysis needs to be seen in the context of the corresponding stocks. This complication is addressed more fully in section 7.3.3. Assessing the stock of financial instruments held by South African non-financial firms below.

7.2. Analysing net and gross sectoral balances for South Africa

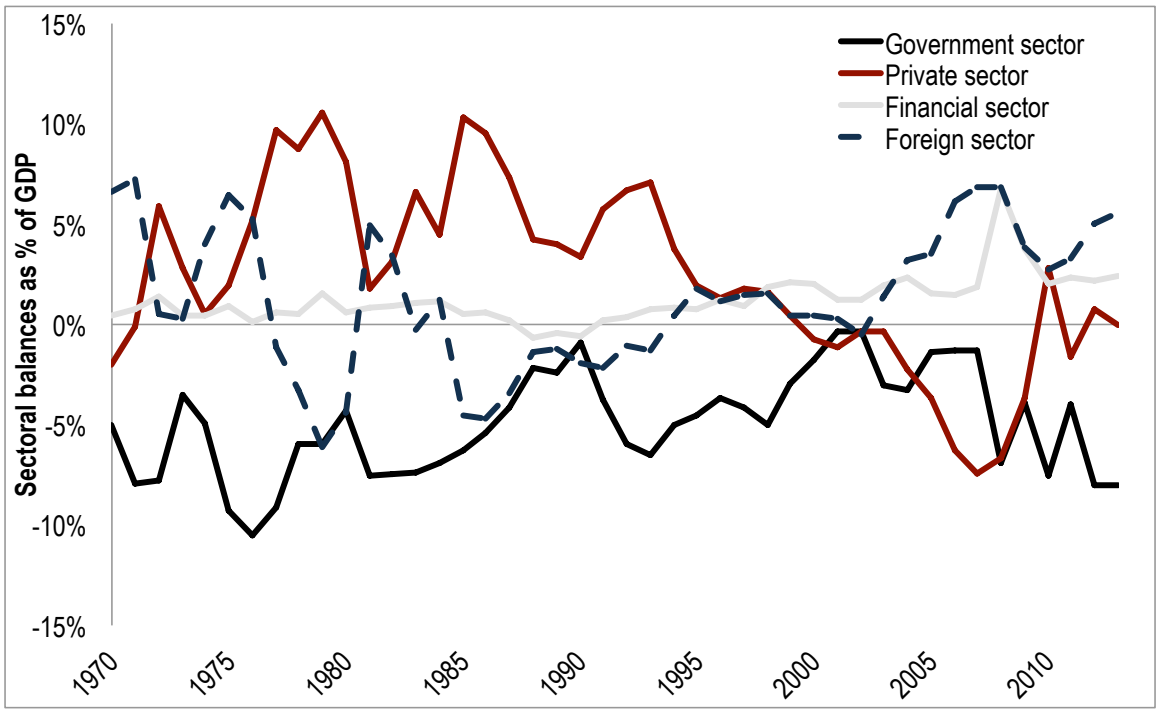
Meanwhile, the net and subsequently the gross financial flows among South African economic aggregates require discussion. For a first simplified illustration the different sub-sectors of the government (i.e. central, provincial and local government authorities, as well as public enterprises) and the two components of the private sector (private enterprises and households) will be collapsed to reduce the amount of economic aggregates to four: (1) total government, (2) private sector, (3) financial sector and (4) foreign sector. Figure 7.1. below shows the resulting sectoral balances expressed as share of GDP for the years 1970-2013.

The following observations can be made: (1) The government sector has been a net debtor over the entire period. It is striking that the government's financial deficit position shrunk notably towards the end of the 1980s, and then again in the early 2000s. Since the late 1970s, the South African government has followed reform policies inspired by *laissez-faire* ideology, aimed at shrinking state expenditure and provision, with a strong focus on reducing general government debt levels. For the state-owned enterprises this initially meant that their business strategies changed, aiming at balanced books with the result of significantly decreased investment expenditure on their side (Malherbe & Segal,

2001). A privatisation process was also brought underway with large state-owned companies, such as Sasol, being gradually privatised. Sasol was privatised and listed on the JSE in 1979.

(2) The private sector (here comprising both, private non-financial firms and households) has been a net creditor during most of the late 20th century. In the mid-1970s and mid-1980s, the saving surpluses generated by the sector peaked around 10% of GDP. This position deteriorated noticeably in the early 2000s, reaching a trough of -7% of GDP in the wake of the global financial crisis.

Figure 7.1. Simplified sector balances for South Africa, 1970-2013



Source: SARB, 1994, SARB 1995a-2014a.

(3) The financial sector mostly saw modest financial surpluses until the mid-1990s. Thereafter, and especially during the 2008-09 crisis, the sector captured large creditor positions.

Finally, (4) the financial balance of the rest of the world vis-à-vis South Africa is a very volatile one. Over the period under study, the foreign sector at times provided as much as 7% of South African GDP in financial inflows into the

country.[2] Simultaneously, the country witnessed strong outflows of foreign funds during the late 1970s and mid-1980s, in response to South Africa's international debt crisis (Aron & Muellbauer, 2000). In the New South Africa, net outflows of foreign funds have been only experienced during the 2002 currency crisis. Nevertheless, the country saw strong slowdowns in foreign funding inflows, which (albeit not as severe as outright outflows) took a toll on the economy in the aftermath of the financial crisis.

These four findings must now be investigated in more detail, drawing upon disaggregated and gross data from the national financial accounts. Gross NFA data is publically[3] only available (that is, available online) from 1980 onwards. However, the author was able to locate the rare SARB Quarterly Bulletin supplement published in December 1994, which provides detailed figures on net and gross financial positions (SARB, 1994).

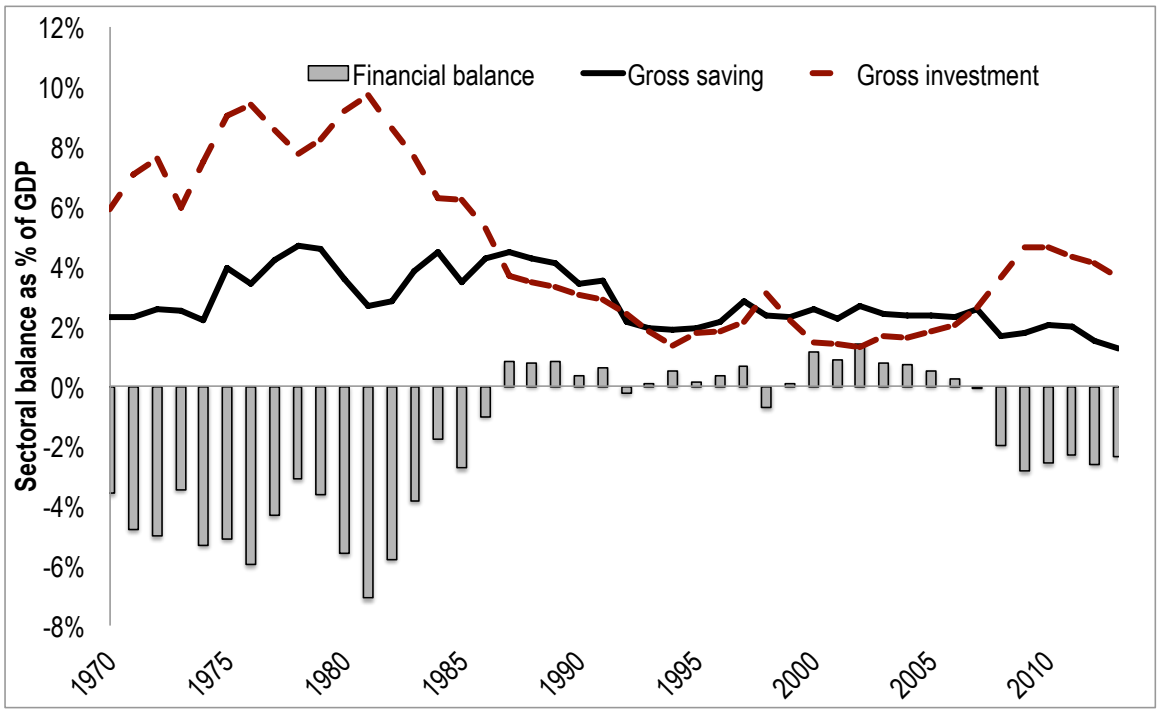
To allow for a closer look, first, the government sector has to be disaggregated into government authorities (of different levels from local to general) on the one hand, and public enterprises on the other hand. Historically, publically owned companies were important for the development of the South African economy. They proved an effective tool for the government to provide economic infrastructure (for instance, electricity and fuel supply, rail and road building) in support of South African businesses. Thus, until the mid-1980s the gross investment of public enterprises (see Figure 7.2.) was substantial and well above their gross saving.

With the advent of neo-liberal reform thinking in South Africa, the role of the government in infrastructure and other public provision was increasingly called into question. The idea that publically owned enterprises should operate like private-sector companies, while running financial surpluses, spread. This

[2] Namely, in the early 1970s and in the run-up to the global financial crisis.
[3] 'Publically' means from the SARB online resources.

change in economic thinking is visible in Figure 7.2., where gross investment by public enterprises drops off markedly during the 1980s. From 1987 onwards these companies stayed out of the red for almost 20 years, right up until the global financial crisis hit South Africa in 2008. The government's preoccupation with balanced books, however, resulted in an ever-decreasing contribution of these companies to South African investment. This is explained a change in the investment strategy of state-owned enterprises as well as the start of their privatisation during the 1980s (Malherbe & Segal, 2001). While on average public enterprises invested 8% of GDP between 1970-85, this rate fell to a meagre 2% of GDP for the subsequent 20 years (1986-2006).

Figure 7.2. Gross saving and investment of South African public enterprises, 1980-2013

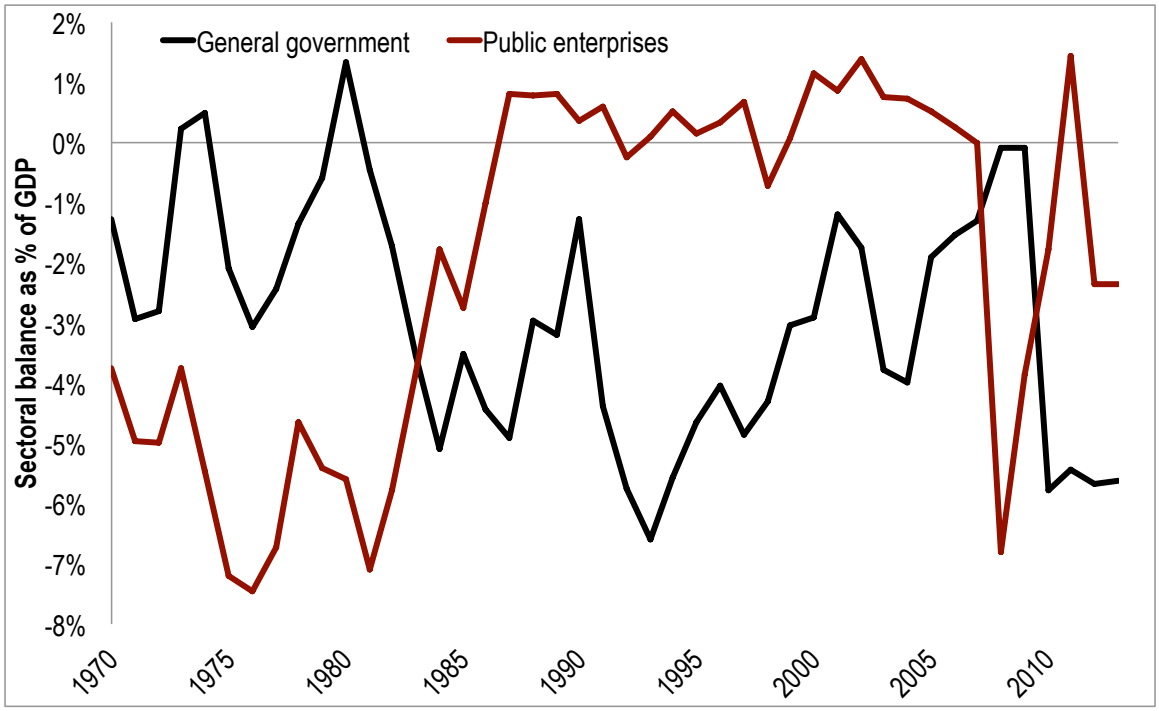


Source: SARB, 1994, SARB, 1995a-2014a.

Unsurprisingly, the importance of public companies as drivers of investment and economic growth has declined severely since the mid-1980s. The notable loss in importance of public enterprise investment since the 1980s has determined the focus of this thesis on private-sector non-financial firms, rather than non-financial firms in general. The close link between public enterprises and the public sector is reflected in the fact that the government's financial

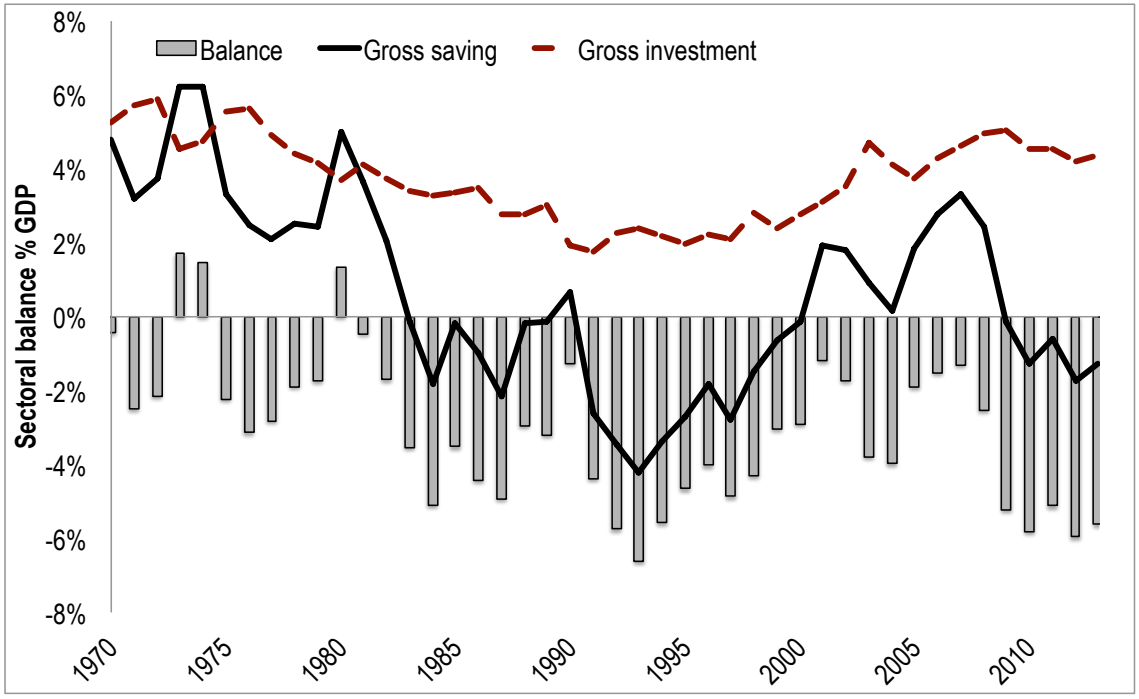
balance deteriorated almost hand in hand with improvements on public companies' books (see Figure 7.3.).

Figure 7.3. Financial balances of general government and public enterprises in South Africa, 1980-2013



Source: SARB, 1994, 1995-2014.

Figure 7.4. Gross saving and investment of the South African general government, 1970-2013



Source: SARB, 1994, SARB, 1995a-2014a.

Strong government intervention in the South Africa economy until the mid-1980s also ensured the high profitability of private sector enterprises. For instance, the creation of state-owned energy providers, that generated electricity at a low cost, was highly beneficial for the capital-intensive mining companies for instance.

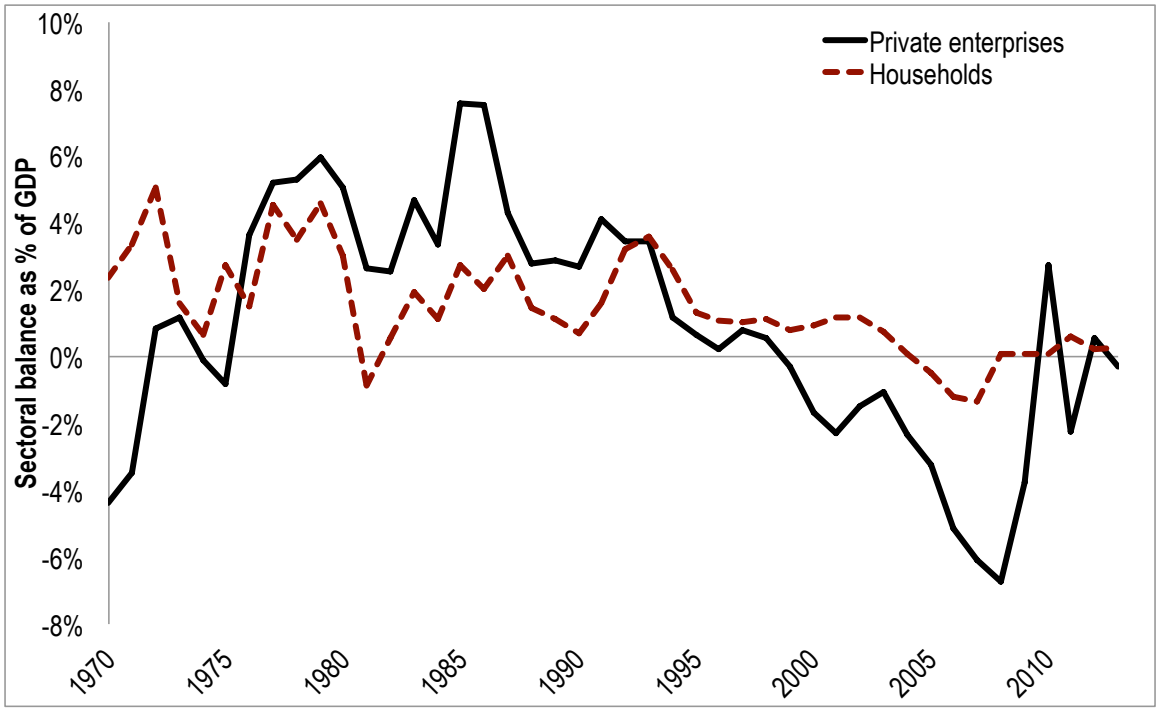
Equally, racist apartheid policies were based on the exploitation of black (and non-white) labour. Cheap labour was particularly important for mining since resource prices were determined in dollar-denominated international markets. Any squeeze in labour cost was then automatically an increase in profit for the resource-extracting industry.

The neo-liberal reforms contributed to the shrinking of government's gross investment in South Africa, which fell from 4% of GDP in 1980 to around 2% of GDP for most of the 1990s. Interestingly, this contraction in government spending was accompanied by worsening public finances (with an increasing public deficit), rather than an improvement as typically proclaimed by austerity proponents. Both government investment and the budget balance only improved in the 2000s (see Figure 7.3.), when infrastructure investment for the upcoming football World Cup in 2010 began. Turning to the private sector and the second finding outlined above, households and non-financial private-sector corporations will be considered separately, since their integration was merely a means to facilitate visualisation.

There are certain similarities in the development of their financial positions since the 1970s. Both sectors generated net savings during the 1980s and much of the 1990s, while the 2000s were accompanied by a financial deficit on their accounts (see Figure 7.5.). Importantly, both net savings and net deficits were more pronounced (and, in terms of the 2000s deficit, longer-lasting) for non-financial private sector companies than for households. The households' (and

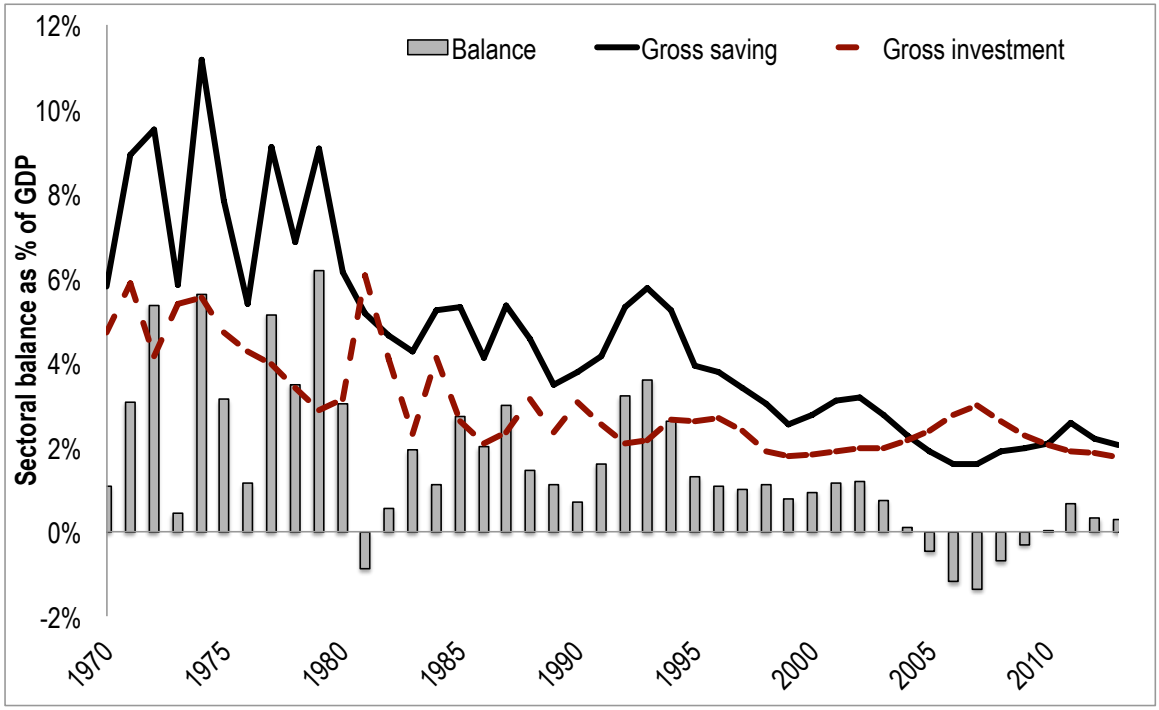
non-incorporated firms') position is discussed in more detail first, followed by an in-depth consideration of private non-financial companies.

Figure 7.5. Financial balances of South African private enterprises and households, 1970-2013



Source: SARB, 1994, SARB, 1995a-2014a.

Figure 7.6. Gross saving and investment of South African households, 1970-2013

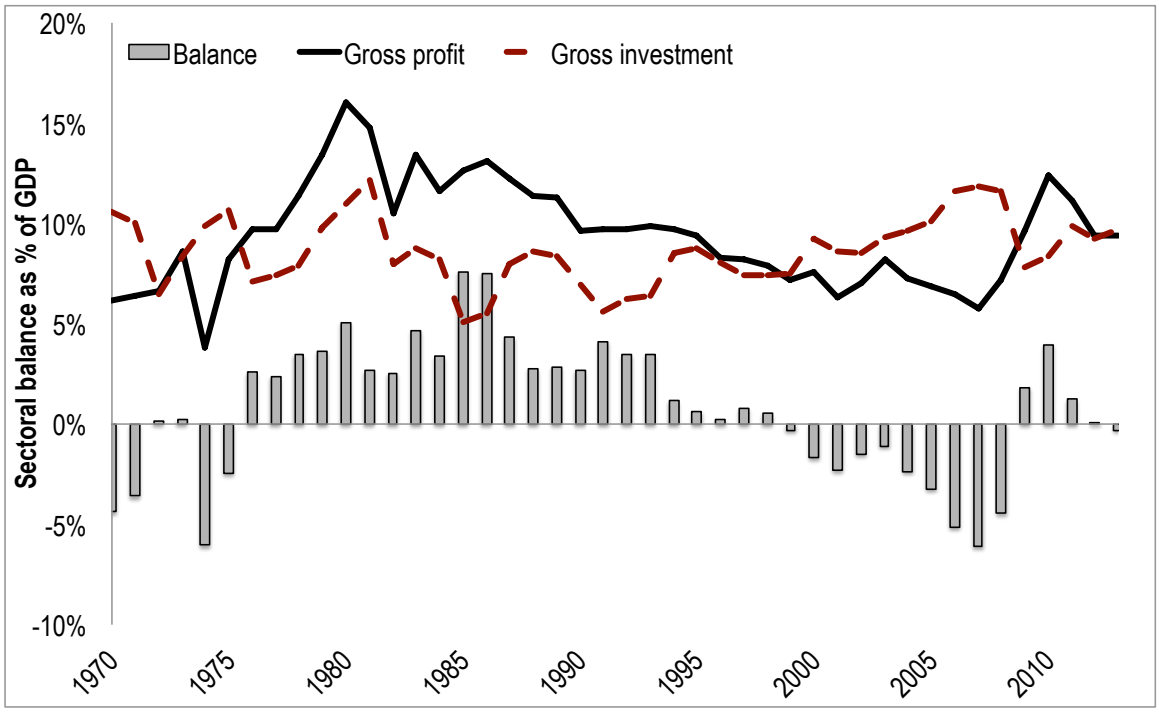


Source: SARB, 1994, SARB, 1995-2014.

South African households have been a surplus sector until recently, generating saving that exceeded their gross investment (see Figure 7.6.). In that sense, the South African economy corresponded to the mainstream textbook case. However, this surplus was increasingly eroded over the second half of the 1990s, and between 2005 and 2009 South African households as a group became net debtors. This development coincided with the peak of house price inflation in the country.

Crucially, the reason for this change in households' financial position was extraordinarily high investment levels. Figure 7.6. shows that the peak of household investment expenditure (3% of GDP) in the early 2000s was in line with average household expenditure between 1970 and 1995. What pushed households into a financial deficit in those years was a fall in gross savings, rather than a marked rise in investment.

Figure 7.7. Gross saving and investment of South African private enterprises, 1970-2013



Source: SARB, 1994, SARB, 1995a-2014a.

Where the South African economy has deviated fundamentally from the imagined textbook economy is the private enterprise sector. Instead of investing

beyond their gross saving, South African non-financial firms were able to generate substantial net saving continuously from the late 1970s up until the 1990s (see Figure 7.7.). It has to be stressed that government policies and especially the racist apartheid regime ensured high profitability of private (white-owned) enterprises in South Africa.

As mentioned in chapter 3, black wages in mining (and unskilled black labour made up the bulk of workers employed in the sector) could be squeezed to a ratio of 1:21 in comparison to white workers' wages by the early 1970s (Lipton, 1980). Even after a wave of wage increases during the 1970s average African earnings per month in agriculture, mining, commerce and government were substantially below R100. At that time, R120 was the official poverty line (Keenan, 1983). Furthermore, the previous chapter outlined that depriving black South Africans of their subsistence (especially in agriculture) was an important strategy pushed by the mining companies to ensure sufficient supply of cheap labour to the mines (Innes, 1984). Thus, the apartheid regime ensured high profits for mining capitalists, at least in the short to medium run (Nattrass, 1991).

During the 1980s, South Africa was hit by the international debt crisis, which engulfed many emerging and developing countries. Private-sector non-financial firms kept a low profile, presumably holding back some of their planned investment. An uncertain outlook for (black) labour costs, given the declining power of the apartheid regime, certainly contributed towards cautious investment outlays by mining companies, which benefitted from the exploitation of black workers. Concurrently, South African capitalists were facing a shortage of skilled labour and depressed domestic demand (due to subdued wages paid to the non-white working population under apartheid). These factors combined with political unrest of the 1980s and uncertainty during the democratic transformation of the 1990s certainly also hampered investment.

Consequently, private enterprises' investment only picked up again in the early 2000s, encouraged by public infrastructure investment for the World Cup. Once again, government intervention generated investment opportunities for the corporate sector. As a result, private non-financial companies became net debtors for the years 2000 to 2008. In reaction to the global financial crisis and the recession it caused in South Africa, non-financial firms returned to net saving by 2009, avoiding deficits on their financial balance for the subsequent four years. Since non-financial firms are at the centre of this thesis, the discussion will return to their financing decisions in part 7.3. below.

Meanwhile, the chapter will proceed to discuss finding (3), as outline above, with respect to the financial sector. As discussed, the financial sector has been increasingly able to generate financial surpluses since 1990. Analysing gross profits and investment (see Figure 7.8.), the origins of the rising net savings become evident: financial institutions in South Africa have been able to capture growing profits, while reducing their own investment spending. Whereas financial sector profits had been increasing since the early 1970s, they initially were matched by rising investment spending of the sector.

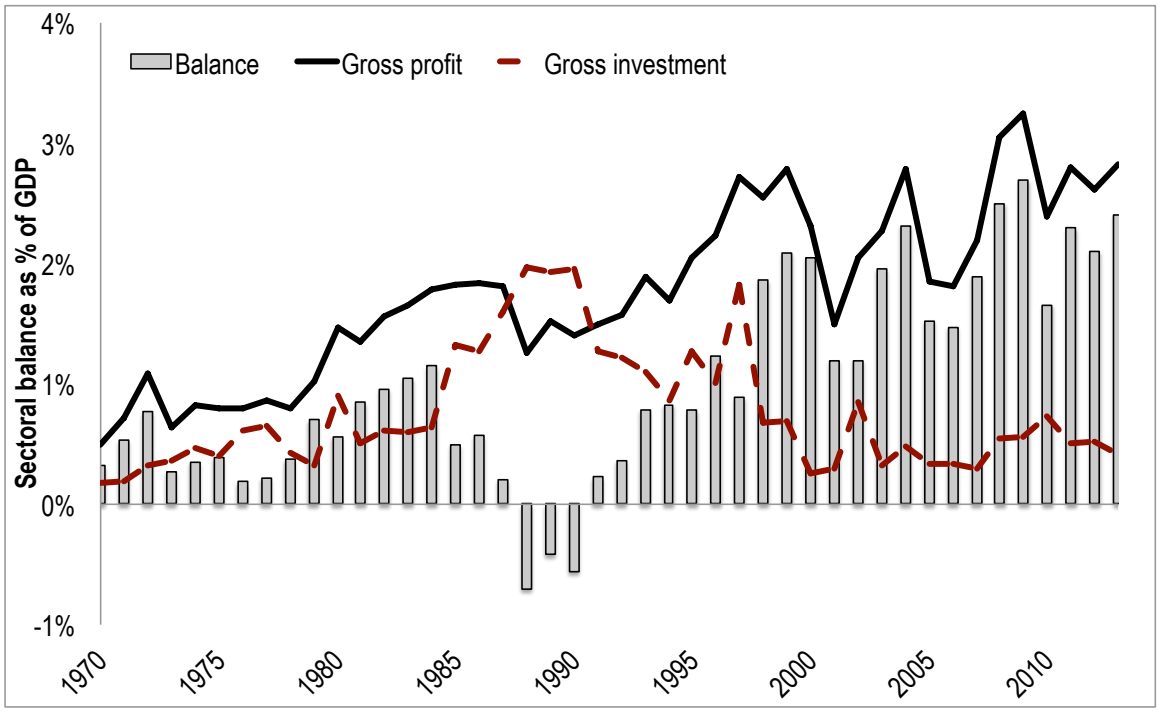
In fact, in the early 1990s capital formation outlays of financial institutions exceeded their profits, pushing the sector into a financial deficit. Subsequently, profits kept soaring, while investment expenditure was reduced over the 1990s, and kept below 1% of GDP since 1998. The strong increases in financial sector profits coincided with the deregulation of financial market in South Africa, which followed the three Reports of the De Kock Commission of Inquiry into the Monetary System and Monetary Policy of South Africa (1979, 1982 and 1985) already mentioned.

These three reports encapsulated neo-liberal ideas, mirroring recommendations put forward in the UK at the time (Jones, 1992). Neo-liberal policies were advocated in South Africa by 'liberals', who argued that the state intervention

of the apartheid government was beneficial to some capitalists while harming South African capitalism (e.g. by slowing down productivity growth and domestic demand) more generally (Nattrass, 1991). Thus, a shift towards less state interventionism was seen as potential fix to the South African economic crisis, which took hold of the country during the 1980s.

Financial liberalisation was part of these neo-liberal policies. Interest rate caps and credit controls were removed in 1980. With the 1986 Building Societies Act competition in the mortgage market intensified. This trend was reinforced by demutualisation and takeovers in 1989 and 1990 (Aron & Muellbauer, 2000). Importantly, the era of the New South Africa coincided with financial liberalisation. In 1995 exchange controls on non-residents were relaxed. Controls on South African residents were partly relaxed after 1997 and increasingly so (especially for corporations) after 2010.

Figure 7.8. Gross saving and investment of the financial sector in South African, 1970-2013



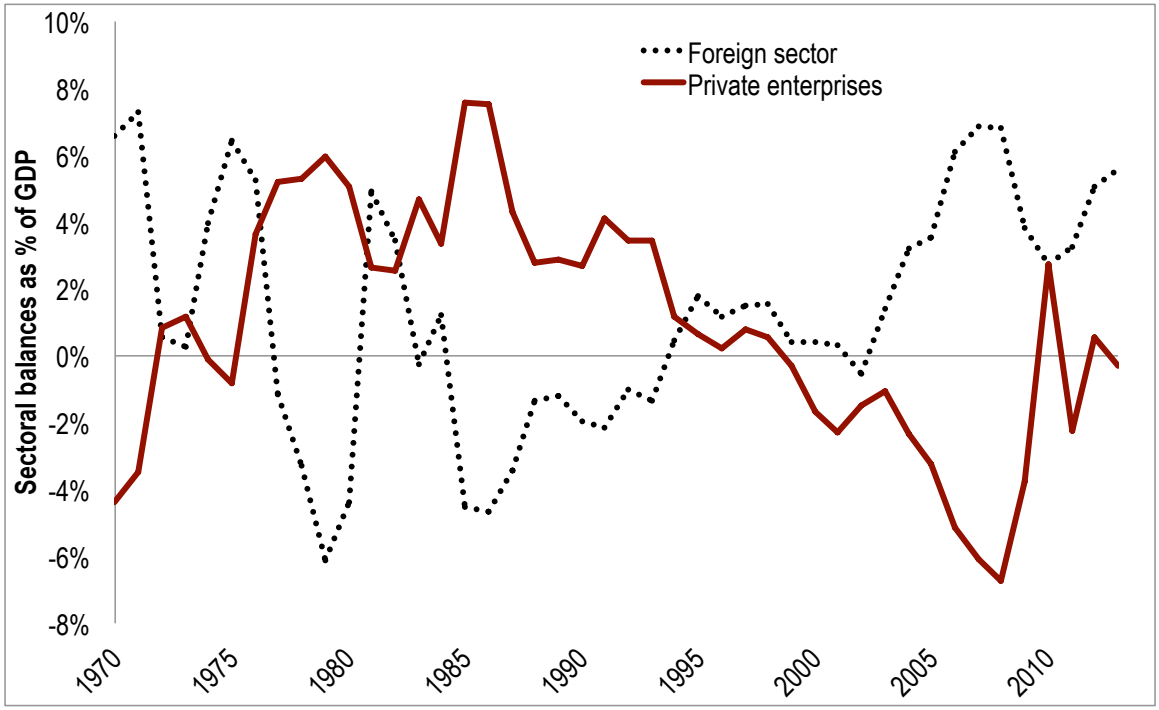
Source: SARB, 1994, SARB, 1995a-2014a.

The deregulation of the South African financial markets resulted in a doubling of the sector's assets between 1985 and 1989, which at the time was hailed as

success of a financial industry re-dynamised by market forces (Jones, 1992). How dynamic a sector with small and stagnating investment expenditure can be is a separate question. What the South African finance industry undoubtedly succeeded in was to grow their gross (and net) profits markedly.

Finally, it is time to consider the foreign sector. South African enterprises have historically had a global orientation, rather than a primarily domestic one (see, for instance, Innes, 1984). This is reflected in the sectoral balances of private enterprises and the foreign sector (see Figure 7.9.). Whenever South African private-sector non-financial firms recorded a net deficit, the rest of the world was in surplus.

Figure 7.9. Financial balances of South African private enterprises and the foreign sector, 1970-2013



Source: SARB, 1994, SARB, 1995a-2014a.

Between 1970 and the mid-1990s these two sectors moved reliably in tandem, with foreign inflows increasing when private balances deteriorated, and vice versa. Towards the end of the 1990s this close link appeared lost. But it emerged with reinvigorated strength around 2003. This apparent link will be at the centre of the investigation going forward. It seems that foreign inflows into the

South African economy chiefly end up with private non-financial firms. Chapter 4 has argued that large non-financial corporations in South Africa have exhibited a growing preference for liquid financial assets. Hence, the two questions to be investigated are: (1) Do South African non-financial firms in aggregate obtain significant financial funds from foreign investors? (2) If that is the case, what happens to these funds once they are absorbed by the non-financial firms' balance sheets?

The chapter argues that South African non-financial corporations receive in fact a substantial amount of foreign financial inflows. The funds obtained are well beyond non-financial firms' requirements for investment funding. They are subsequently held as liquid financial assets (mostly, cash and deposits) with South African banking institutions, from where they are channelled into mortgage credit for household customers. In this way, the heightened liquidity preference exhibited by South African corporates over the past two decades has contributed to asset price inflation in the country's real estate markets.

7.3. Sources and uses of funds for South African non-financial firms

The aim of this chapter is to provide an improved understanding of non-financial firms' financial operations and their impact on macroeconomic dynamics. For this purpose, the previous section explored the financial balances of the macroeconomic aggregates (i.e. the government, households, non-financial corporations, the financial sector and the rest of the world) in South Africa. This section concentrates on non-financial companies, scrutinising their overall financial position by examining the sources and uses of their funds in detail.

An analytic methodology developed by Corbett and Jenkinson (Corbett & Jenkinson, 1996; Corbett & Jenkinson, 1997) is applied to assess the net sources of non-financial companies' investment spending. Corbett & Jenkison, however, focus entirely on productive investment, i.e. gross capital formation. Since this

analysis is primarily interested in the financial investments of corporations, this methodology had to be adjusted to account for gross (rather than net) sources of financing. Furthermore, studies preoccupied with companies' financing of productive investment typically focus on flow analysis. However, to provide a full macroeconomic picture the consideration of stocks is vital. Since there are no data available on the stocks held by South African non-financial companies[4], a series was constructed that will give an indication of the size of these financial stocks.

The chapter shows that South African non-financial businesses in aggregate can finance most of their gross capital investment internally. The external finance they acquire goes far beyond their productive investment needs, resulting in large volumes of financial investment. Most of that investment is likely to be denominated in domestic currency, since most of it is held with South African banks, where less than 5% of total deposits are foreign currency deposits (SARB, 1995a-2015a). The depth of local financial markets would also suggest that assumption. Equally, the big company groups that are likely to hold large shares of their assets in foreign currency are not South African any more after listing abroad (such as Anglo American). The large volumes of financial investment are not a recent development, but a historic trend, calling into question the idea that South African companies have financialised with the re-integration of South Africa into the global economy.

The most popular instrument for external financing in the New South Africa has been corporate paper (i.e. corporate equity, bonds and bills). Financial assets are then to a large extent held in cash, short- and medium-term bank deposits. Thus, South African non-financial companies prefer to hold their financial investment in highly liquid form, confirming the findings in chapter 4,

[4] This was confirmed by the SARB, which has been consulted.

which discussed the heightened liquidity preference of South African non-financial corporations since the end of the apartheid regime.

During the 1970s and 1980s, trade credit was another major financial asset held by non-financial firms. A high proportion of their non-invested profits were directly channelled towards households and small non-incorporated businesses. In this way, large non-financial firms acted as financial intermediaries, something mainstream economic theory does not consider. Non-financial companies have shifted their financial investment from trade credit towards other financial assets, which according to the SARB capture financially innovative operations. These other financial assets are thus likely to be highly liquid. Non-financial companies' rising liquidity preference facilitated banks' mortgage loan expansion over the past two decades, contributing to house price inflation in South Africa. This happens because much of non-financial firms' liquid assets (especially cash held in demand deposits and assets in short, medium and long-term deposits) end up with South African banks. Banks in turn issue mortgages to households and, increasingly, credit to businesses that are part of the FIRE industries, meaning the finance, insurance and the real estate sector.

7.3.1. Assessing net sources and uses of funding for South African non-financial firms

During the 1990s, Corbett & Jenkinson (Corbett & Jenkinson, 1996; Corbett & Jenkinson, 1997) put forward a methodology that assesses the main sources of investment finance for non-financial corporations as a whole in a given economy. Their study aimed at debunking the strict country typologies, distinguishing between bank-based and market-based financial systems. As discussed in chapter 6, the context of the debate around bank-based versus market-based economies can be traced back to Gerschenkron's (Gerschenkron, 1979[1962]) writings on economic development in Europe. Gerschenkron

stressed the varying roles states (and other institutions) played in different countries during the development process. The idea was that financial systems differ across countries, which in itself is doubtlessly true. However, the reaction to this insight was to reduce these differences to two archetypes. The bank-based system was seen as one in which large banks and large non-financial corporations have close ties and dominate the economy. In contrast, the Anglo-Saxon economies were stylised as examples of market-based systems, in which capital markets (rather than banks) were the most important source of investment finance. These economies were believed to be more dynamic, as they are not dominated by large non-financial firms and banks.

Corbett & Jenkinson (1996, 1997) among others (see also Mayer, 1987, 1988, 1980) call this distinction and the related country classification into question, by pointing out that (among other things) the majority of investment financing is done internally across major OECD countries. This of course is in line with Kalecki's ideas on non-financial companies' financing.

A good starting point is to assess which sources South African non-financial companies use most for productive investment. For this purpose, the chapter will use the Corbett & Jenkinson methodology, which distinguishes between companies' gross sources and gross uses of funds. Sources include positions such as internal finance (that is retained profits), bank loans, new equity issued, bond issuance and trade credit. These are items 1-5 in Table 7.1. (which has been introduced in chapter 6, see Table 6.1.). As for uses, non-financial firms can channel the finance obtained into cash and deposits, equity, bonds, trade credit or new capital formation (items 6-10 in the table).

The methodology demands that net positions for the individual financing items are calculated. For instance, bank loans are balanced against cash and deposits held with banks, yielding a net position (item 2 minus item 6 in Table 7.1.) on bank assets held by non-financial companies. In this way, it is simple to

calculate net sources for each financial position, which in sum should correspond in total to physical investment (item 10) undertaken by non-financial companies in aggregate. This is in fact the case for the South African flow of funds data, with only minor divergences. In order to apply the Corbett & Jenkinson approach to South African flow of funds data, the transaction items detailed on the National Financial Accounts have to be adapted to the gross sources and gross uses items presented in Table 7.1. Not all of them are relevant to the investigation of net sources of finance used by non-financial firms. Gold and other foreign reserves, for instance, are not a source or use of funds for non-financial corporations.

Table 7.1. Calculation of net sources of investment financing

	Gross sources		**Gross uses**
1	Internal		
2	Bank loans	6	Cash and deposits
3	New equity issues	7	Equity purchases
4	Bond issues	8	Bond purchases
5	Trade credit received	9	Trade credit given
		10	New capital formation
	TOTAL SOURCES		**TOTAL USES**
	Net sources		**Net uses**
1	Internal		
2-6	Net bank		
3-7	Net equity		
4-8	Net bonds		
5-9	Net trade credit		
	NET SOURCES	10	**PHYSICAL INVESTMENT**

Source: Adapted from Corbett & Jenkinson (1997).

Thus, gross sources of funds for non-financial firms were determined as follows: (1) internal funds were taken from the national production and income accounts, as stated in the top panel of the flow of funds data. Internal funds

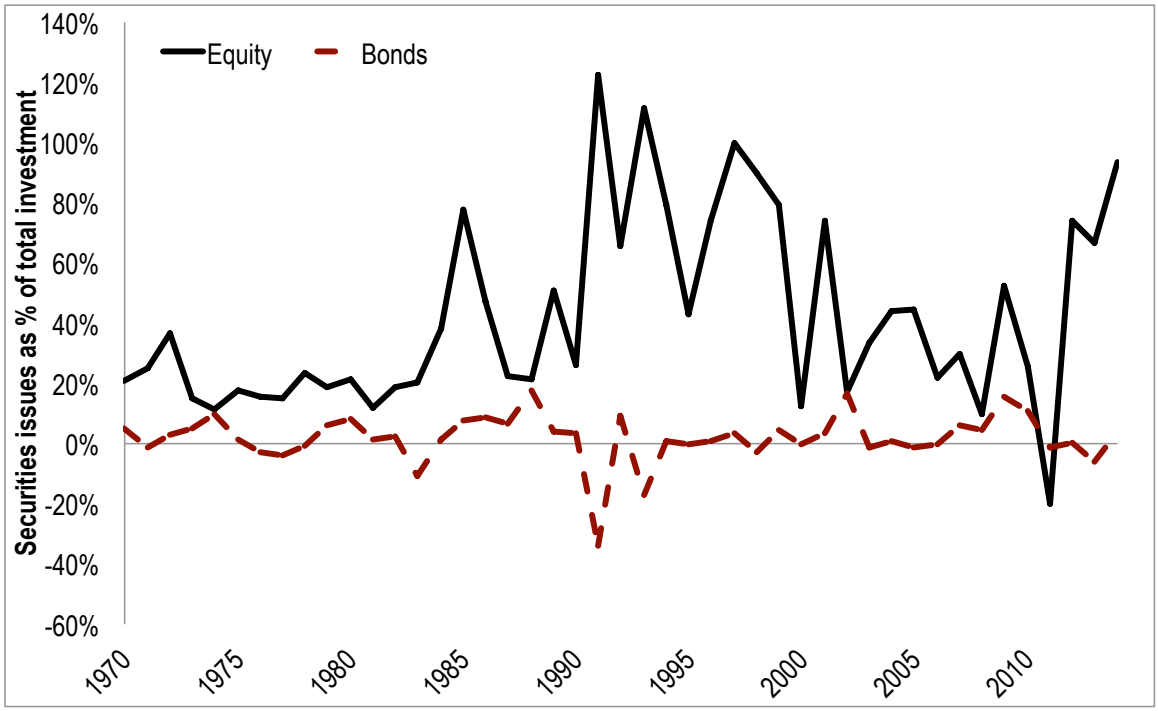
equal gross saving, containing net saving and a provision for depreciation. (2) Bank loans were calculated as the sum of two positions: bank loans and advances, and mortgage loans. Strictly speaking, mortgage loans might go beyond bank lending, since in South Africa mortgages can be extended by institutions that are not banks. There is limited data available on the issuance of mortgages by non-bank monetary institutions. This position will be disaggregated where necessary in the analysis to follow (see parts 7.3.3.1. and 7.3.3.2.).

However, since mortgage loans issued by non-bank financial companies accounted for merely one tenth of total mortgage issuance, the analysis will abstract from this complication for the moment. (3) Equity issuance covers the emission of ordinary shares, and other loan stock and preference shares. (4) The position 'new bond issues' is interpreted broadly and matched with the transaction item 'other bills' provided on the NFA. Thus, this covers corporate paper except for stocks. (5) The item 'trade credit' consists of trade credit and short-term loans, which is one joint position in the South African flows of funds. Finally, there are two additional items that do not figure in the list of sources in Table 7.1. The first is the position 'other', containing deposits with other institutions, other financial assets and the balancing item. The financial instruments gathered under the 'other' category were small during the 1970s, as will be shown below. They have grown substantially in recent years. This position will be disaggregated in the analysis where necessary.

The second position is non-bank long-term loans. These loans can be issued by any institution in the South African economy, including corporations, the government, non-bank monetary institutions or banks themselves. These two items have been added to the list, while items (3) and (4) were merged, since equity and bond issuance both tap into the capital markets. Effectively, in the case of South Africa issuance of other bills is a small item in comparison to

equity issuance, which dominants the market of issued corporate securities (see Figure 7.10.). Therefore, this merging is justified.

Figure 7.10. Bonds and equity issued as share of total investment by South African non-financial firms, 1970-2014



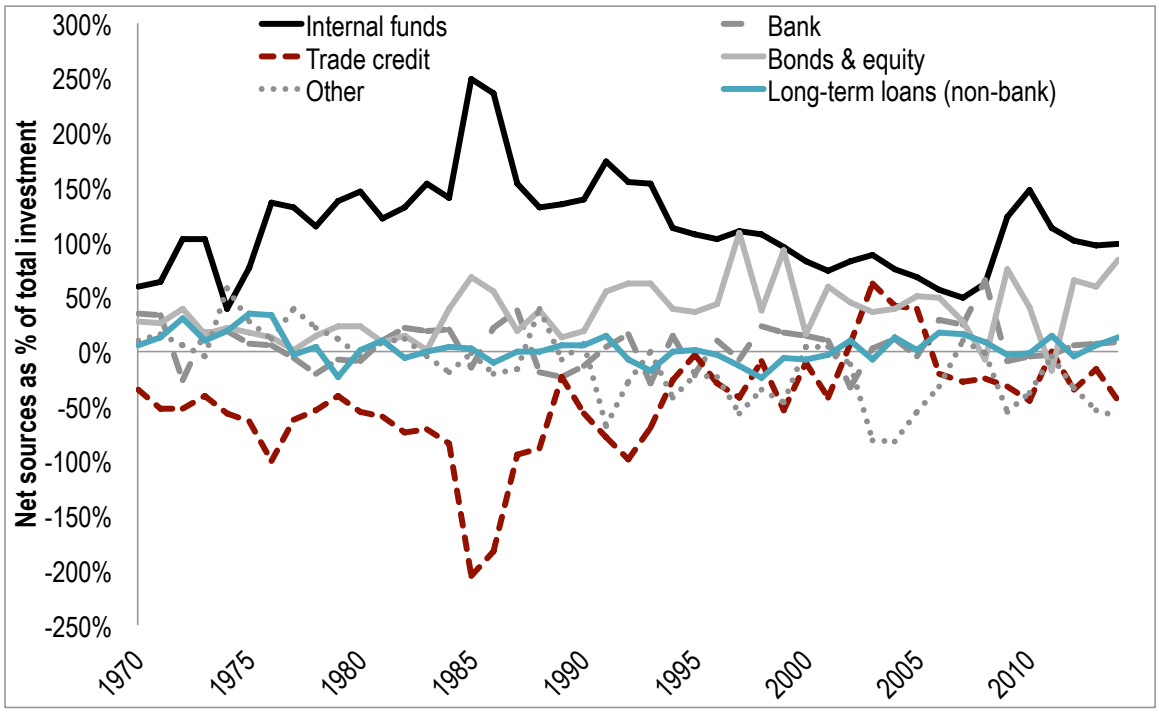
Source: SARB, 1994, SARB, 1995a-2015a.

The gross uses of funds are set up in correspondence to the list of gross sources: (6) Cash and deposits are cash and demand, short-term, medium-term and long-term deposits with banking institutions, including mutual banks and the Postbank. The position also includes, somewhat curiously, the items mortgage loans. This is, however, a small, intermittently appearing position. (7) Equity purchases by non-financial firms cover purchases of ordinary shares, and other loan stock and preference shares. (8) Bond purchases are calculated as sum of other bills (that is, corporate securities with the exception of equity) and long-term loans provided by non-financial firms to their debtors. Since long-term loans are specifically singled out, and not part of trade credit, they are simply long-term payment commitments to non-financial corporations, bearing a certain similarity with bonds. (9) Trade credit includes three transactions items,

namely trade credit and short-term loans, foreign branch balances and receivables.

Finally, once again the positions 'other financial assets' and 'long-term loans' are added. The former covers non-financial companies' interests in retirement and life funds, deposits with other institutions, other financial instruments, as well as the balancing item. The latter consists of long-term loans extended by non-financial firms. Balancing these items, as indicated in the lower panel of Table 7.1. (for instance, subtracting cash and deposits from bank loans), yields the net sources of funds. Once the net financing items are obtained, they can be expressed as share of physical investment expenditure, resulting in a breakdown of total net sources for investment finance (see Figure 7.11.).

Figure 7.11. Net sources of funds as share of total investment for South African non-financial firms, 1980-2014



Source: Author's calculations based on SARB, 1994, SARB, 1995a-2014a.

It becomes clear that during much of the period from 1970 to 2014 South African non-financial companies in aggregate were able to cover their investment expenditure through retained profits. Only in the early 1970s (more precisely, in 1970, 1971 and 1974) and again between 2000 and 2008 did non-

financial corporations in aggregate require considerable external funding for their investment, because retained profits on average only met 60-70% of their financing needs. The 2000-2007 period saw a pick-up in investment activity in South Africa. Once the global financial crisis hit South Africa, internal profits were restored as single most important net source of investment finance, again covering all of the gross capital expenditure undertaken by non-financial firms.

Internal funds as share of total investment were particularly high in the mid-1980s, when South African non-financial companies could have financed 2.5 times as much investment as they chose to undertake. This, of course, was a symptom of the social and economic crisis under the apartheid regime, which coincided with the country's debt crisis. Non-financial businesses abstained from investing, while also facing capital controls, which hampered outright capital flight. It has to be stressed that all these considerations are made from a macroeconomic perspective, meaning non-financial companies are treated as aggregate. Hence, a maldistribution of retained profits across firms could result in a situation where large profits coexist with the need for external financing (see, for example, Michell, 2014).

Crucially, South African non-financial companies during these years used their internal funds to a large extent for trade credit. This might in fact be a sign of Steindlian maldistributed profits within the non-financial business sector: while some companies managed to accumulate large retained profits, others were dependent on trade credit for their operations. South African alcohol brewers but also other consumption goods producers were among these companies (see chapter 3). Importantly, over the course of the 1990s the role of trade credit diminished markedly, while other financial operations became a net outlet for non-financial firms' funds. Much of what is contained in the position 'other' represents new financial products, thus, financial innovation (Monyela, 2012).

The second most important source of external finance among non-financial companies during the 1980s was bonds and equities. Here, equity issuance is the important component. The resources generated through new corporate bonds never exceeded more than 20% of total investment expenditure during the period, while new equity raised up to 120% of total investment spending, going well beyond financing needs for productive investment. Figure 7.11. shows that bond and equity emission was an important net source of finance during the 1980s, when retained profits were also high.

In the early 1990s equity and bond emission became less important. Interestingly, issuance volumes picked up again from the mid-1990s onwards, coinciding with a decline of retained profits as major financing source. As mentioned before, between 2000 and 2008 internal profits fell below 100% of total investment expenditure by non-financial firms. In those years external financing gained in importance, with bond and equity issuance, bank lending and even trade credit (which until then was essentially a drain on funds) all contributing towards investment outlays. Non-bank long-term loans never mattered much as net source of funds for South African non-financial firms, maybe with the exception of a few of years during the 1970s.

Table 7.2. below provides data on net sources of funds as share of South African non-financial companies' investment expenditure by decade. Two important events are singled out, due to their political and economic significance: the end of the apartheid regime in 1994, and the arrival of the global financial crisis in South Africa in 2008. While the socio-economic importance of the crisis is, of course, nowhere near that of the end of apartheid, it had a profound impact on South African employment and people's welfare. During the crisis, close to 1 million jobs were lost (South African National Treasury, 2011; South African National Treasury, 2014). The end of apartheid provides a structural break in institutions and policies, while the 2008 recession is a one-off event worth highlighting.

Considering decade averages the graphical representation is confirmed. Internal funds are the single most important source of investment finance, and mostly cover all of non-financial firms' expenditure on gross capital formation. This changed somewhat during the early 2000s and, unsurprisingly, there was a shortfall of retained profits as result of the 2008 crisis. However, internal funds regained their importance right after the crisis.

Table 7.2. Total net sources of funds by South African non-financial firms as share of their capital formation, by decade

	1970-1979	1980-1994	1995-1999	2000-2007	2008	2009-2014
Internal funds	96%	156%	105%	72%	62%	113%
Bond & equity issuance	20%	34%	64%	40%	-8%	51%
Bank loans	6%	4%	5%	7%	65%	1%
Long-term loans (non-bank)	12%	0%	-9%	5%	8%	4%
Trade credit	-56%	-84%	-27%	6%	-25%	-29%
Other	20%	-9%	-38%	-30%	-5%	-34%

Source: Author's calculations based on SARB, 1994, SARB, 1995a-2014a.

As mentioned above, the years 2000-2007 were marked by rising investment across the South African economy, in anticipation of the World Cup. It is likely that small and medium sized enterprises (for example in the hospitality industry) also intensified their investment spending. This group of firms typically has very limited savings at their disposal and would have needed bank loans to finance their investment. Bank lending as source of funds gained in importance during the period. However, bond and equity issuance did even more so. These financing options are not open to most SMEs and hint at increased investment outlays by large companies in those years.

Bond and equity emissions (of which, as mentioned before, the vast majority are equity issues) have gradually grown since the 1970s. It would be, however, difficult to speak of a shift among non-financial companies from bank-based to market-based financing, which some authors suggest as a central characteristic of the financialisation of non-financial companies (see Lapavitsas, 2013). Here a historical assessment (rather than a simple focus on the New South Africa, see

Rodrigues Teles Sampaio, 2012) is necessary to understand non-financial businesses' financial operations.

Bank loans (together with non-bank long-term loans) never played a significant role in investment finance among South African firms. Internal funds were sufficient to meet these needs. Bank lending and other financial instruments generated liquidity, which was then used for trade credit. Since the 1990s, the importance of trade credit has shrunk considerably, and the liquidity raised through lending and capital market operations is put into financially 'innovative' assets.

The important question emerges: who was the main beneficiary of trade credit? Trade credit often benefits small and medium-sized enterprises, which tend to have very poor access to bank lending and virtually no access to capital markets. This is the case in many advanced economies and it appears to be even more so in South Africa (Berry et al., 2002). The limited access to finance is one aspect that squeezes South African small and medium-sized non-financial businesses, which are not very numerous.

To see whether non-financial firms use substantial trade credit for their investment finance the next section will assess gross sources and uses of funds. Netting out sources and uses hides important information. It is possible that trade credit benefits South African SMEs significantly, but does not show up in the net position, since large companies expand far more trade credit than small and medium-size non-financial firms obtain.

7.3.2. Assessing gross sources and uses of funding for South African non-financial firms

Netting out sources and uses, as in the previous section, hides the true volumes of, say, equity issuance and purchases among non-financial firms, since we are presented with the difference of sales and purchases. Therefore, the author

suggests adjusting the Corbett & Jenkinson approach to reveal this additional layer of detail.

For this purpose, it will be calculated how much physical investment every individual gross source item (including internal finance, bank loans, new equity, bonds issued and trade credit, i.e. the left-hand side column in Table 7.3.) could cover. This will provide a measure of financial investment, expressed in relation to gross capital formation. Summing up gross sources and expressing them as share of physical investment will show how large financial investment is, because every percentage point above 100% captures financial investment.

Figure 7.12. shows gross sources of funds expressed as share of total investment spending by South African non-financial corporations between 1970 and 2013. The top line represents total gross sources. On average for the entire period total gross sources amounted to twice the sum of physical investment undertaken by South African non-financial firms. Hence, on average South African corporations invested as much in financial as in productive assets.

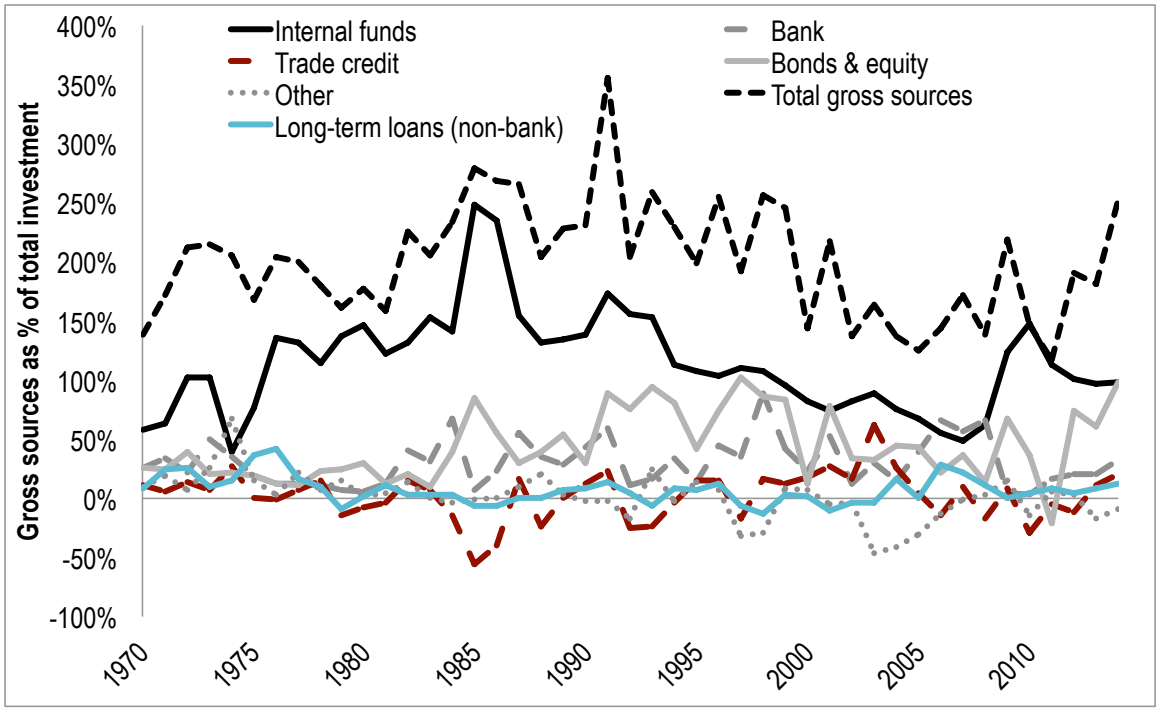
Table 7.3. Relationship between gross sources and gross uses of non-financial firm funds

Gross sources	**Gross uses**	
Internal		
Bank loans	Cash and deposits	
New equity issues	Equity purchases	**FINANCIAL**
Bond issues	Bond purchases	**INVESTMENT**
Trade credit received	Trade credit given	
	New capital formation	**PHYSICAL INVESTMENT**
TOTAL SOURCES	**TOTAL USES**	

The gross positions in Figure 7.12. emphasise the role that different types of finance play for non-financial firms. For instance, the analysis of net sources suggested that trade credit was mainly an outlet for non-financial businesses'

funds, rather than a source of it. This is confirmed by the analysis of gross sources. They do not substantially contribute towards investment financing until the 2000s. Hence, to answer the question raised at the end of the previous section, it is unlikely that incorporated small and medium-sized enterprises are the major beneficiaries of non-financial companies' trade credit. However, non-incorporated firms, which tend to be very small and are counted as part of the household sector, could be.

Figure 7.12. Gross sources of funds as share of total investment for South African non-financial firms, 1970-2014



Source: Author's calculations based on SARB, 1994, SARB, 1995a-2015a.

Similarly, bonds and equity in gross terms also gain in importance as source of financing during the 1990s. Strikingly, the role bank loans play in non-financial companies' financing is revealed even more clearly when assessing gross sources of funds. As internal finance declined drastically after 2005 bank loans came in to fill this gap, replacing waning equity emission in 2008, when the impact of the financial crisis arrived in South Africa. Bank loans were not as prominent in the net sources analysis presented in Figure 7.11., implying that non-financial corporations in South Africa hold substantial financial assets with

banking institutions. In a net assessment bank loans and bank deposits cancel each other out.

The share of cash and bank deposits in total gross uses of funds has increased markedly since the 1970s (see Table 7.4.). This trend only halted in the aftermath of the global financial crisis and is likely to re-emerge. In 2014, a quarter of gross uses, expressed as share of gross capital formation, was channelled into cash and bank deposits, implying that these extremely liquid assets are on the rise again. Table 7.4. below reaffirms the findings of the previous section. It would be difficult to claim that equity and bonds have constituted a new destination for non-financial companies' financial investment in the New South Africa. During the latest period (2009-2014), the share of bond and equity purchases in total financial investment was in fact below the levels of financial investment into the two instruments during the 1970s and 1980s.

Table 7.4. Total gross uses of funds by South African non-financial firms as share of their capital formation, by decade

	1970-1979	1980-1994	1995-1999	2000-2007	2008	2009-2014
Cash & bank deposits	17.4%	19.1%	37.8%	44.9%	43.7%	13.9%
Bond & equity issuance	2.0%	10.6%	13.7%	-4.2%	0.7%	1.9%
Long-term loans (non-bank)	0.5%	0.2%	0.7%	0.2%	0.1%	0.2%
Trade credit	77.2%	47.2%	34.6%	19.4%	16.7%	25.9%
Other	1.8%	8.4%	29.4%	17.7%	18.4%	34.6%
Total gross financial uses	**98.7%**	**87.0%**	**104.3%**	**70.5%**	**69.4%**	**65.3%**

Source: Author's calculations based on SARB, 1994; SARB, 1995a-2014a.

Similarly, it is not true that non-financial corporations in South African have increased their financial investment in relation to gross capital spending markedly since the 1970s, or since the end of apartheid. Financial investment among South African non-financial firms has always been high. During the 1970s, for instance, gross investment into financial assets matched productive investment spending. While this percentage increased in the early years of the New South Africa (1995-1999), it came down below 1970s levels by the early 2000s.

This statement requires one qualification. The vast majority of financial assets held by South African non-financial companies during the 1970s was trade credit. During this period, corporations extended trade credit of an amount equivalent to more than three quarters of their investment expenditure. The volume was somewhat smaller in the following decade (1980-1994), falling to just below half of non-financial firms' entire expenditure on gross capital formation. Nonetheless, trade credit was the largest position among the different types of financial assets held by non-financial corporations. However, trade credit is often identified as a productive financial asset because it is typically extended among companies. Thus, a supplier might demand advance payment for an order to facilitate the production of the intermediate goods to be supplied.

Table 7.5. Share of total trade credit received by sector, 1970-2014

	1970-1979	1980-1994	1995-1999	2000-2007	2008	2009-2014
Foreign sector	7%	9%	-7%	-31%	27%	-40%
Monetary authority	0%	0%	11%	-61%	-11%	16%
Other monetary institutions	0%	6%	6%	18%	54%	-12%
Public investment corporation	0%	0%	0%	0%	0%	0%
Insurers and retirement funds	3%	5%	7%	14%	3%	51%
Other financial institutions	1%	0%	5%	1%	5%	-2%
General government	-2%	3%	25%	29%	19%	28%
Public corporations	19%	9%	2%	-1%	19%	-11%
Private corporations	-2%	-18%	-7%	77%	-8%	39%
Households	73%	86%	57%	54%	-7%	31%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: SARB, 1994, SARB, 1995b-2015b.

Table 7.5. provides the share that each sector listed in the flow of funds data received of total trade credit expanded by decade. The sector with the largest share in total trade credit is highlighted in grey for each decade. During the 1970s and 1980s, households (including non-incorporated businesses) benefited from more than 70% of total trade credit. This share declined markedly during the second half of the 1990s. From 2000 onwards other economic aggregates have received more trade credit than South African households.

For South African households in the 1970s and 1980s credit obtained directly from non-financial corporations most likely took the form of instalment sale

and lease agreements or open accounts, which include all outstanding (and mostly short-term) debt to dealers (Prinsloo, 2002). Interestingly, increased involvement in direct financial intermediation by non-financial companies is often interpreted as sign of financialisation. If this definition is accepted, then South African non-financial businesses were substantially financialised already during the 1970s. In fact, this type of financial activity fell off steeply after 1994, the year which is often seen to mark the beginning of increased financialisation in the country.

Hence, if one wants to tell a financialisation story here, it is not straightforward and does certainly not run along stylised lines, which take the growth of financial investment by non-financial companies or a shift towards more market-based financial assets as characteristic. What can be said with certainty is that the importance of trade credit as outlet for non-financial companies' liquidity has steadily diminished since 1970. Only recently (2009-2014) was there a slight uptake in trade credit measured as share of total capital formation. Concurrently, the significance of other financial assets (according to the SARB this is financial innovation) has more than doubled (as a share of capital formation) since the 1980s.

It is also very clear in both Figure 7.11. and Figure 7.12. that flows of external funds, be they generated by bond and equity issuance, bank loans, trade credit or other sources, are quite volatile. This means that bank lending can be the most important source of financing for a couple of consecutive years (as happened between 2006 and 2008), and subsequently collapse almost completely (like in 2009). Thus, to have a full picture of the importance of non-financial firms' financial operations for their own balance sheets, but also for the macro economy, one has to assess the stocks of financial instruments that non-financial corporations carry on their balance sheets.

7.3.3. Assessing the stock of financial instruments held by South African non-financial firms

Sources of external funds for South African non-financial companies appear somewhat volatile over time. This is not surprising, as equity, for example, will mostly be issued when market conditions are advantageous to preserve the share price. Hence, what is needed to provide a more comprehensive picture of non-financial companies' aggregate financial operations and their macroeconomic importance is an examination of stocks of financial assets, not just their flows.

As South Africa regained access to international markets in 1994, the volumes of debt – often financed through foreign capital inflows – held on the balance sheets of non-financial companies located in South Africa increased markedly. This was encouraged by the financial liberalisation that South Africa underwent during the 1990s (Aron & Muellbauer, 2000).[5] Together with the fact that financial assets were also accumulated, albeit at a somewhat slower speed, this observation is sometimes interpreted as sign of financialisation (McKenzie, 2013). These developments are illustrated in Figure 7.13., which shows the accumulation of financial asset and liability stocks since 1995.

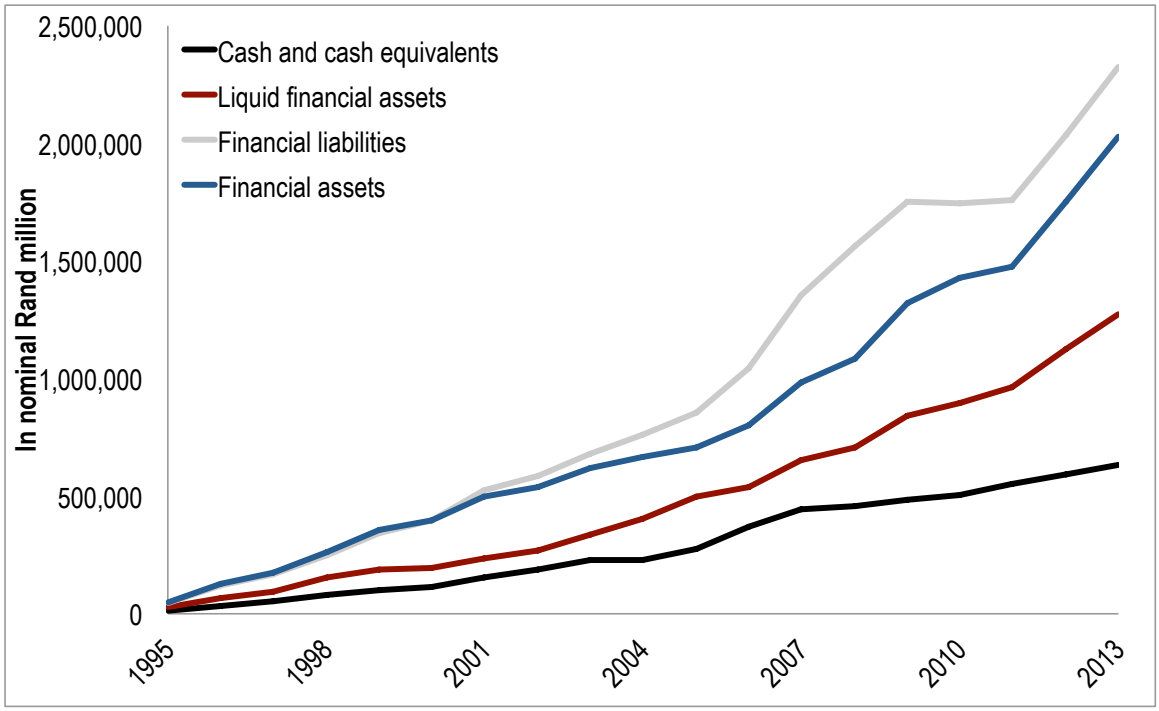
The stock figures have, in the absence of better data sources, been calculated from flow-of-funds data. Therefore, they do not represent actual levels of corporate financial stocks. Data on stocks of financial assets and liabilities of private non-financial firms in South Africa are not available. Nonetheless, this calculation provides an indication of the importance of financial assets and liabilities for the private enterprise sector in the New South Africa. Since these calculations are based on a range of simplifications[6], they have not been

[5] According to an IMF financial reform index, South Africa is the most financially liberalised economy in Sub-Saharan Africa (Abiad, Detragiache & Tressel, 2008).

[6] These simplifications include, for example, the absence of value changes to the financial assets held by non-financial firms on their balance sheet. This is especially problematic for equity purchases. Value re-assessments are typically provided in

calculated further back than 1995, which marks the beginning of a fundamentally new political era in the country.[7]

Figure 7.13. Selected financial stocks accumulated by South African non-financial firms between 1995 and 2013



Source: Author's calculations based on NFA data (SARB, 1995-2014b).

Using nominal data, the stock of financial liabilities run up by South African non-financial firms since 1995 was R2.3 trillion in 2013, which was matched by a stock of R2 trillion of financial assets. Importantly, the majority of the financial assets amassed since 1995 – namely R1.3 trillion – were liquid assets, such as cash and cash equivalents, deposits held with other financial institutions, government bonds, other bills and other financial instruments.[8] While this

companies' annual reports. It is, however, difficult to re-assess the worth of financial assets held by non-financial firms in aggregate. Trade credit and very liquid assets (such as cash and bank deposits) will not be as (if at all) vulnerable to this shortcoming. Since these two positions account for the lion's share of non-financial firms' uses of financial assets, the calculations appear less problematic for uses of funds than for sources of funds.

[7] The origins of the New South Africa are typically dated to April 1994. However, the country's new constitution was agreed upon in 1995.

[8] According to the SARB (2012) this category is most likely to pick up on financial innovation. While one cannot be certain that financially innovative products are

observation does not demonstrate the overcapitalisation of South African NFFs, i.e. the excessive holding of liquid assets by these firms, across the board, it does show that financial instruments, especially highly liquid ones, have increased on their balance sheets over time. In fact, macroeconomic data are unlikely to demonstrate general overcapitalisation of South African firms because of the aggregation of large, medium and small companies on the macroeconomic level. Nevertheless, the findings here are consistent with the increasing presence of overcapitalisation among JSE-listed NFFs found in chapter 4.

What is more enlightening than a simple analysis of volumes, however, is an assessment of which types of sources and uses have been most important for non-financial firms, both over time and in terms of stocks. Hence, it is useful to express the estimations of financial stocks by type of financial instrument as a share of the total financial asset stock. For this purpose, the 24 transaction items provided by the SARB in the flow-of-funds data, and discussed in part 7.3.1., have been grouped into eight different categories of financial assets.

Moreover, one should distinguish between sources of funds, which provide the stocks of financial liabilities, and uses of funds, which yield stocks of financial assets. As to sources of finance for private non-financial firms – that is, sources of external financing as opposed to retained profits – there are eight main options: non-financial firms tend to mostly use (1) bond and equity issuance, meaning issuance of other bills, other loan stock and preference shares and ordinary shares. This is followed by (2) long-term credit, (3) bank loans and advances, (4) trade credit and short-term loans, (5) other liabilities, (6) deposits with other institutions, (7) amounts payable and (8) interest in retirement and

---

necessarily highly liquid, it appears a reasonable assumption given recent developments. Collateralised debt obligations were such a success in the run-up to the subprime mortgage crisis because of the very liquid markets in which they were traded. This of course does not mean that liquidity cannot disappear quickly (see Nesvetailova, 2012).

life funds. This list is arranged in order of importance of these liabilities as source of external finance in 1995, the beginning of the constructed series. It should be noted that the category 'long-term credit' has been constructed for the purpose of this analysis as the sum of long-term loans and mortgage loans.

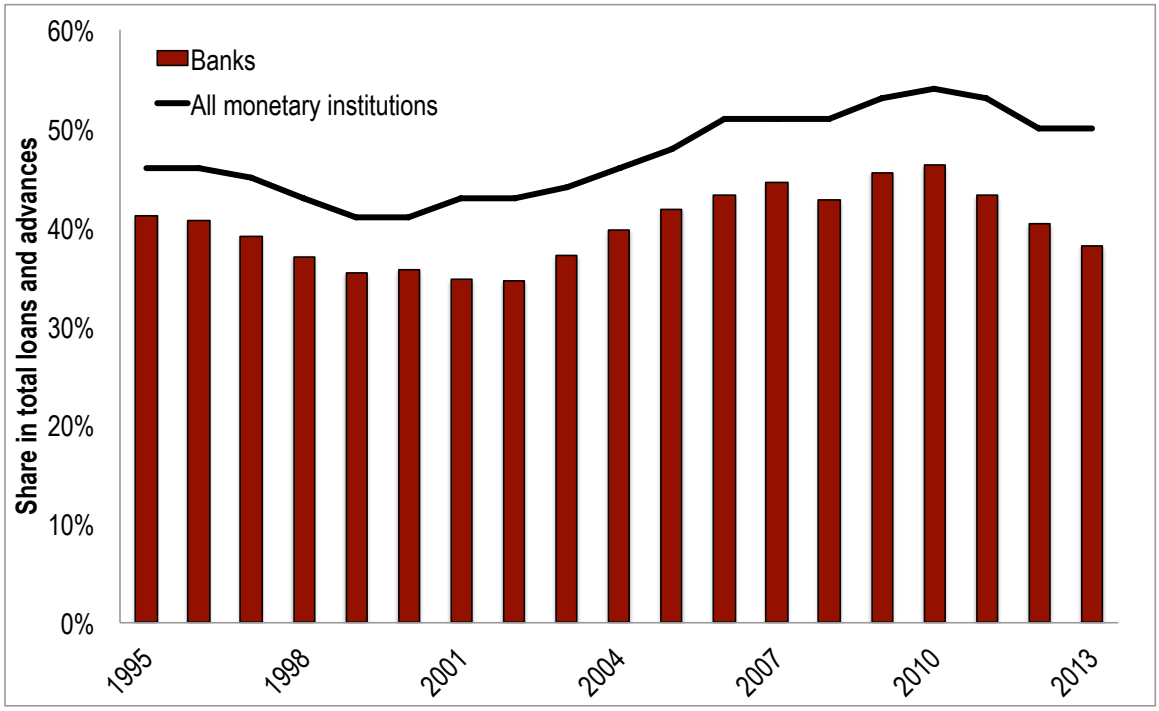
As mentioned above, this category of loans can be either issued by banks or non-bank monetary institutions. Data to help distinguish between the two sources of long-term credit (that is banks and other non-bank financial companies that extend credit) is available for the years since 1995.

When analysing the uses of funds – that is the outlets for financial investment – by South African non-financial corporations, the items that are important from the above list change somewhat. In 1995, the order of importance among financial assets was: (1) Cash and deposits, (2) interest in retirement and life funds, (3) other financial assets, (4) trade credit and other short-term loans given by non-financial firms, (5) government securities, (6) long-term loans and mortgage loans, (7) amounts receivable and (8) bond and equity purchases.

Figure 7.14. reports on the share of mortgage advanced in total credit expansion, differentiating between banks and all monetary institutions. It is striking that mortgage loans make up a large share and, since 2006, the majority of credit extension. It also becomes obvious that banks grant the vast majority of mortgage loans, while the share of mortgages extended by non-bank monetary institutions has increased recently. Non-bank financial companies slightly exceeded one tenth of all mortgage lending in South Africa during the second half of the 1990s, and this share increased to 18% of total mortgage credit after the financial crisis (2009-2013, see SARB, 2010a-2014a). Hence, there is clearly growth in credit extension by non-banking institutions in the South African economy. Nevertheless, the overwhelming majority of credit extension remains with South African banks.

When analysing the uses of funds – that is the outlets for financial investment – by South African non-financial corporations, the items that are important from the above list change somewhat. In 1995, the order of importance among financial assets was: (1) Cash and deposits, (2) interest in retirement and life funds, (3) other financial assets, (4) trade credit and other short-term loans given by non-financial firms, (5) government securities, (6) long-term loans and mortgage loans, (7) amounts receivable and (8) bond and equity purchases.

Figure 7.14. Mortgage loans as share of total loans and advances



Source: (SARB, 2001b-2014b).

These groupings will be the basis for the examination of stocks of financial liabilities (in part 7.3.3.1. below) and financial assets (in part 7.3.3.2. below) amassed by South African non-financial firms on their balance sheets. Both lists are in places more detailed than the groupings used above for the analysis of net and gross sources and uses, for example. The increasing disaggregation where necessary and interesting is done purposefully as the focus of the examination is steadily narrowed.

7.3.3.1. The stock of non-financial firms' financial liabilities

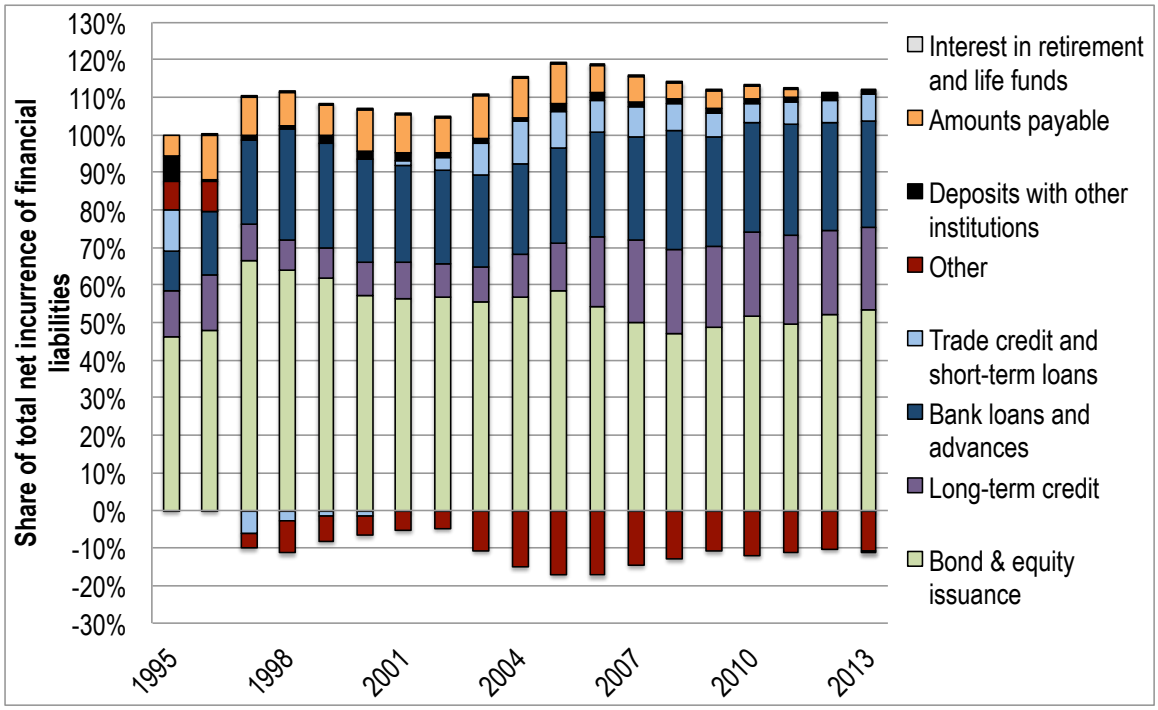
Due to the importance of stocks in flow-of-funds analysis, the SARB is currently compiling a complete balance sheet of stocks of asset and liabilities for the South African economy (Monyela, 2012). Unfortunately, these efforts are limited to public authorities and enterprises, as data on the private sector balance sheet – referring to private enterprises and households (the latter also including non-incorporated businesses) – are not available. Therefore, the accumulated stocks since 1995 have been calculated for the eight main sources of corporate external finance named above. Of course, these stock figures do not represent actual corporate financial stocks. Nonetheless, this calculation can yield information on the importance of different types of financial liabilities for the private enterprise sector in the New South Africa. The estimates provided are expressed in real (2010 Rand) terms to ensure that inflation is not distorting the calculated stocks.

Figure 7.15. shows the stocks of financial liabilities amassed by private non-financial firms in South Africa in aggregate between 1995 and 2013. The eight main sources of external finance are represented as a share of total liabilities incurred. Negative values indicate that old – meaning pre-1995 – stocks were paid off. This development mainly refers to other liabilities, which contain all instruments not part of the 24 categories of financial assets and liabilities recorded in the National Financial Account.

According to SARB representatives familiar with the data, the category 'other' mostly includes new financial instruments that were the consequence of financial innovation (Monyela, 2012). The vast majority – that is, 70% and more – of external finance amongst private enterprises is sourced through bonds and equities, long-term credit and bank loans and advances. The single most important source of financial liability is corporate securities. For the years 1995 to 2013, the stock of bonds and equity issued accounted for more than half of all

amassed liabilities on average. Among corporate securities, ordinary shares are the most important source of external finance, accounting for three quarters of total corporate paper in 2013, while other bills made up a mere 6% of the category, with other loan stock and preference shares accounting for 18%. This means that 41% of all liabilities accumulated by private non-financial firms since the end of the apartheid regime were ordinary shares.

Figure 7.15. Stocks of financial liabilities of South African non-financial firms, 1995-2013



Source: Author's calculations based on National Financial Account (SARB, 1996b-2014b).
Note: The calculation is based on financial liabilities stocks measured in constant 2010 ZAR, using the GDP deflator (World Bank, 2014) to obtain real values.

The foreign sector is the most important buyer of ordinary shares in South Africa. Over the years 1995 to 2013, it purchased 45% of all ordinary stocks sold in South Africa. Its importance in demanding JSE-issued shares was followed by that of other domestic financial institutions (purchasing 24% of all ordinary stocks) and the Public Investment Corporation (buying up 17% of all ordinary stocks). Of course, private non-financial firms are not the only entities issuing ordinary shares through the JSE. Financial enterprises and public sector

corporations are the two other major issuers. Nevertheless, private-sector non-financial firms issued the majority of all ordinary shares between 1995 and 2013, accounting for 53% of the total stock in ordinary shares.

As discussed in sections 7.2. and 7.3. above, this trend is unlikely to be new. The financial positions of domestic non-financial corporations and the foreign sector have been intricately linked at least since the 1970s. From then onwards it can be shown, using flow-of-funds data, that the two sectors possess financial positions that complement each other, moving in tandem. Hence, there is evidence that South African non-financial firms have been relying on foreign capital inflows as source of funding for a long time. Arguably, major South African corporations (such as Anglo-American used to be until recently) were reliant on foreign capital for their foundation and kept these ties throughout their existence (see Innes, 1984).

On the liability side, bank loans and advances as well as long-term credit, which refers to mortgages and other long-term loans, mostly from banks but increasingly from non-bank monetary institutions, have grown considerably on non-financial firms' balance sheets since 1995. Bank loans and advances represented 28% of total liabilities run up by non-financial corporations, while long-term loans accounted for 22%. Nonetheless, bonds and equities, which total 54%, exceeded the sum of these two positions, making them the largest stock of liabilities held by South Africa non-financial firms.[9]

The run-up of these liabilities by private non-financial enterprises has been accompanied by a swift accumulation of financial assets on the balance sheets of these companies. Until 2001 the accumulation of financial assets and liabilities proceeded hand in hand. Subsequently, during the global boom years leading up to the 2007/08 financial crisis, corporate amassing of financial assets

[9] These three items together exceed 100% because some stocks were run down, edging into negative terrain. Most notably 'other' financial liabilities were reduced between 1995 and 2013, by 11% of total liabilities held in 2013.

and liabilities diverged when financial liabilities accumulated more quickly (see Figure 7.13.). This means that private-sector non-financial firms were net borrowers during these years. However, by 2009 and surely as response to less favourable external financing conditions after the crisis, private non-financial corporations returned to a net lender position. Thus, the stock of financial assets they have accumulated since 1995 has to be examined.

7.3.3.2. The stock of non-financial firms' financial assets

This section will answer the question: in which types of financial assets have South African non-financial firms mostly invested since 1995? Figure 7.16. illustrates these stocks of accumulated financial assets. Two aspects stand out: (1) Demand and other bank deposits are the main destination for financial flows from the private non-financial corporate sector. This mirrors the rising liquidity preference among non-financial firms observed in chapter 4. These deposits are mostly demand, short-term and medium-term deposits, i.e. very liquid financial assets. Concurrently, it is important to stress that all of these deposits are held with banking institutions, meaning South African banks (rather than other financial companies) are the main destination of non-financial firms' financial investment.

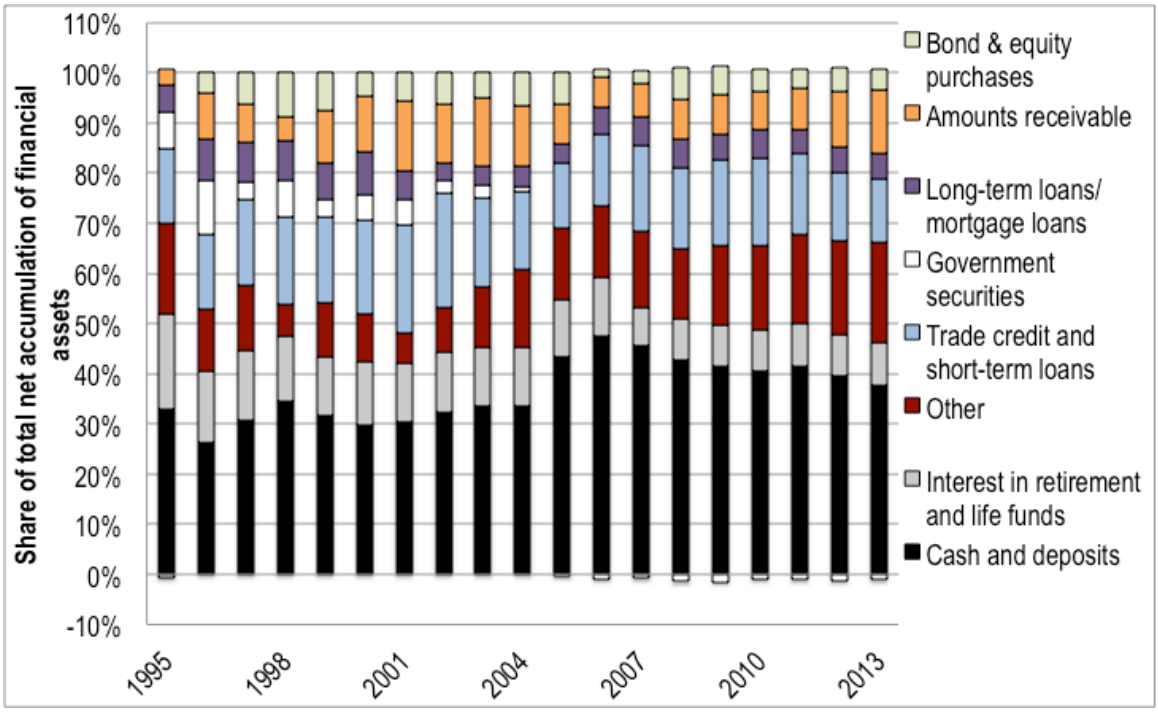
(2) Especially since the early 2000s, non-financial corporations have shifted away from holding trade credit, which is mostly extended to households and informal businesses (as discussed in section 7.3.2.), to other financial assets on their balance sheet. These other financial assets, since they are likely to be financial innovation, are also highly liquid, once again reflecting the heightened liquidity preference of non-financial firms.

In Figure 7.16. cash and cash equivalents[10] (making up 33% of total net acquisition of financial assets between 1995 and 2013) and long-term deposits

[10] This refers to cash and short-term, as well as medium-term, deposits.

(5% of total net acquisition of financial assets in 2013) have been grouped together, since these assets are all held with South African banks – that is, commercial banks, mutual banks, the Land Bank, and the Postbank. These assets tend to be very liquid, as they are either held in current accounts or in short-term and medium-term deposits with banks. Even long-term deposits, which have a maturity span of a year or more, can typically be resolved before the end of their maturity period, albeit for a fee. In this sense, cash and deposits are liquidity hoards amassed by private non-financial firms to manage their liquidity. Notably, South African private-sector non-financial firms have increased their cash and deposit holdings over the 1990s and early 2000s, from around 30% of total financial asset stock during the late 1990s, to more than 40% of total financial asset stock since 2005.

Figure 7.16. Stocks of financial assets of South African non-financial firms, 1995-2013



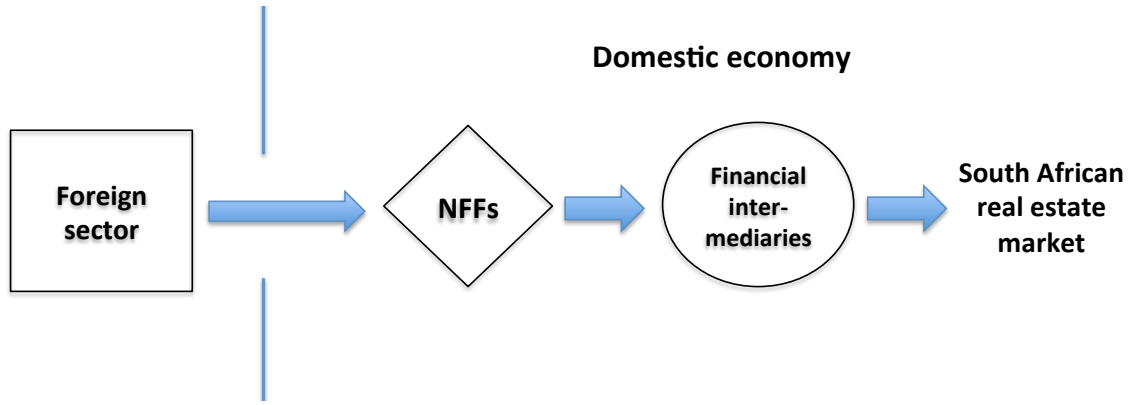
Source: Author's calculations based on SARB, 1996a-2014a.
Note: The calculation is based on financial liabilities stocks measured in constant 2010 ZAR, using the GDP deflator (World Bank, 2014) to obtain real values.

Tracing the flow of funds from the firms' perspective, it appears that foreign funds flow into South African non-financial firms, which then in turn use much

of this finance to acquire liquid assets that end up on the balance sheets of South African banks and, in the case of other financial assets, also non-bank financial institutions (see Figure 7.17.). The eminent question now is: What do financial intermediaries do with these funds? Which assets do they create on their own balance sheets to balance their liability positions?

The second question is what happens to households' balance sheets. It has to be stressed once again that the household sector also contains non-incorporated businesses. That means households and these very small, informal businesses receive less trade credit from non-financial firms. Does that mean their sources of funds have shifted? Both these questions are investigated in the following section.

Figure 7.17. Direction of funds flowing into the South African economy



7.4. The Impact of corporate liquidity on other macroeconomic aggregates

This section will investigate what impact non-financial firms' use of funds has on other macroeconomic aggregates in the South African economy. The examination of non-financial firms' financial operations in aggregate has shown that South African non-financial businesses have changed their financial investment behaviour since the 1970s. Maybe surprisingly, they have not increased their financial investment as share of total productive investment. Equally, they do not seem to have shifted their main sources of funding for gross capital formation (from bank to market-based finance), as the financialisation story would predict. Their financial investment remains high,

but has changed focus from trade credit to households towards more liquid financial assets, mainly classified as 'other' financial assets. The impact of non-financial firms' withdrawal from trade credit to households and non-incorporated firms is discussed in part 7.4.1. Section 7.4.2. will then show the impact of non-financial firms' financial operations on the balance sheets of financial institutions.

7.4.1. The impact on South African households and non-incorporated non-financial business

This section examines other financial assets and liabilities in detail, because they have become a growing financial asset on non-financial firms' balance sheets over the past two decades. So far, several flow of funds transaction items have been grouped under 'other financial assets' to make the empirical analysis in this chapter manageable, avoiding detail that might obscure the bigger picture. In terms of non-financial firms' uses of funds, three transaction items were combined as 'other' assets: (1) deposits with other financial institutions, (2) interest in retirement and life funds and (3) other financial assets[11].

Table 7.6. South African non-financial firms' uses of funds for other financial assets as share of their capital formation, 1970-2014

	1970-1979	1980-1994	1995-1999	2000-2007	2008	2009-2014
Deposits with other institutions	0.9%	1.0%	1.5%	1.0%	-4.8%	4.9%
Interest in retirement and life funds	0.0%	4.3%	14.4%	3.1%	12.6%	5.9%
Other financial assets	0.8%	3.0%	13.5%	13.6%	-0.2%	23.7%
Other (total)	1.8%	8.4%	29.4%	17.7%	7.6%	34.6%

Source: SARB, 1994, SARB, 1995a-2015a.

Table 7.6. disaggregates total other financial assets into these three sub-categories by decade. Total other financial assets were negligible in the 1970s. Subsequently, they grew somewhat during the 1980s and early 1990s. But they only started to make up a substantial figure, measured as share of total gross

[11] Throughout the 1980s, the SARB reported the items other financial assets and the balancing item as one position. This implies that officials had limited knowledge of what type of transactions made part of other financial assets. This combined reporting suggests that other financial transactions and potential measurement errors were indistinguishable.

capital formation of non-financial firms, by the late 1990s, when total other financial investment amounted to more than a quarter of non-financial firms' productive investment. During that period, non-financial corporations mostly invested into retirement and life funds and other financial assets.

As stated previously, the latter position can be equated with financially innovative instruments (Monyela, 2012). Since 2000 non-financial firms attention switched to other financial assets, with the exception of the crisis year 2008, when non-financial companies in aggregate attempted to sell off other financial instruments (therefore the negative figure of -0.2% of gross capital formation,) while acquiring interest in retirement and life funds. Overall, and among the categories of 'other' assets, other financial assets have been the focus of non-financial firms' financial investment. South African households have (aside from mortgage and bank borrowing) increasingly financed themselves through other liabilities since the mid-1990s. Table 7.7. shows how much external finance (as a share of GDP) the different macroeconomic sectors obtained by taking on other financial liabilities.

Table 7.7. Other financial liabilities as source of funds by sector, as share of GDP, 1970-2013

	1970-1979	1980-1994	1995-1999	2000-2007	2008	2009-2013
Foreign sector	0.7%	-0.2%	0.0%	-0.4%	-1.7%	-0.4%
Monetary authority	0.7%	-0.1%	0.0%	-0.3%	-0.1%	0.0%
Other monetary institutions	0.2%	1.0%	0.5%	0.2%	-0.8%	-0.1%
Other financial non-bank institutions	0.3%	0.4%	0.8%	0.5%	-1.1%	1.9%
Government	0.8%	0.1%	0.2%	-0.3%	-0.4%	0.9%
Private corporations	0.3%	0.4%	0.0%	-1.4%	0.4%	-0.1%
Households	0.2%	0.7%	0.8%	0.9%	2.3%	0.5%

Source: SARB, 1994, SARB, 1995a-2015a.
Note: Other financial non-bank institutions include the Public Investment Corporation, insurers and retirement funds and other financial institutions.

The sector that generated the highest amount of external funds through the use of other financial liabilities is highlighted in grey for each time period. Once again, it is clear that of all the macroeconomic aggregates South African households and non-incorporated companies used this financial instrument most enthusiastically between the mid-1990s and the financial crisis. Between

1995 and 2007, households in aggregate borrowed on average 0.8-0.9% of GDP in this manner. In the post-crisis period this changed, and households (including non-incorporated firms) were only able to generate 0.5% of GDP on average from other financial liabilities.

Contrasting other financial liabilities with other financial assets (see Table 7.8.), it is again confirmed that private-sector non-financial firms have been the main investors into this asset type in the New South Africa. Hence, it is conceivable that South African non-financial companies simply switched from trade credit to households and non-incorporated business to other financial instruments, which once again benefit this group.

Table 7.8. Other financial assets as use of funds by sector, as share of GDP, 1970-2013

	1970-1979	1980-1994	1995-1999	2000-2007	2008	2009-2014
Foreign sector	1.0%	0.2%	-0.3%	0.2%	1.3%	0.7%
Monetary authority	0.2%	0.4%	0.6%	-0.3%	1.5%	-0.1%
Other monetary institutions	0.8%	0.9%	-0.1%	0.0%	-0.4%	0.2%
Other financial non-bank institutions	0.7%	0.4%	1.7%	0.1%	-1.1%	-0.1%
Government	1.1%	0.7%	0.0%	-1.5%	-2.8%	-0.2%
Private corporations	0.2%	0.2%	1.9%	1.0%	-0.1%	2.4%
Households	0.0%	-0.3%	-1.3%	-0.3%	0.0%	0.0%

Source: SARB, 1994, SARB, 1995a-2015a.
Note: Other financial non-bank institutions include the Public Investment Corporation, insurers and retirement funds and other financial institutions.

However, it is unclear whether banks and non-bank financial institutions now are involved in the intermediation process. Trade credit was directly extended to households and non-incorporated firms. Other financial liabilities might cover arrangements such as store cards, which effectively function as credit cards, provided by non-financial firms to their consumers. It is likely that this switch of financial investment outlets among non-financial firms was detrimental to non-incorporated companies. Trade credit directly supports the productive activity of companies, in this case small and micro business activity. Other financial assets, such as store cards, are likely to support consumption rather than small business operations. In this way, the change in non-financial corporations' financial investment behaviour might have been detrimental for

the South African economy, since informal businesses are an important provider of employment and a source of enterprise.

But even if these new 'other' financial arrangements linked non-financial companies and households (including non-incorporated firms) directly, there has been a structural change in non-financial firms' financial operations that affects South African households and non-incorporated business profoundly. Non-financial firms increasingly invest into cash and bank deposits held with South African banks (as shown in parts 7.3.2. and 7.4.2.1.). Thus, the amount of funds that non-financial firms provide through other financial assets and liabilities is much smaller than the volume of trade credit South African consumers and non-incorporated business used to receive during the 1970s and 1980s. Hence, there is evidence that the link between formal (and most probably mainly large) non-financial businesses and small, non-incorporated non-financial firms has broken down in South Africa.

In 2008, South African households (and non-incorporated firms) obtained an exceptional 2.3% of GDP through the acquisition of other financial liabilities. During the 1970s, consumers benefited every year from trade credit equivalent to 4% of GDP on average. This figure rose to 5% of GDP for the years 1980-1994. Hence, the withdrawal of trade credit by South African non-financial firms, which were increasingly concerned with liquidity management, meant that households and non-incorporated companies had to turn to banks and potentially non-bank financial institutions for borrowing. This is particularly likely to have harmed non-incorporated businesses, which notoriously struggle to access formal credit (Falkena et al., 2002).

Table 7.9. shows the main sources of external finance for households and non-incorporated businesses by decade since 1970. As discussed above, trade credit and short-term loans to households and non-incorporated businesses were likely extended as instalment sale and lease agreement or open accounts, which

together accounted for 60% and more of consumption credit during the 1970s (Prinsloo, 2002). During the 1970s, more than half of households' (and non-incorporated businesses') borrowing was raised this way. As non-financial firms shifted their uses of funds away from trade credit, households moved more towards bank loans and, since 2000, also mortgage loans.

Table 7.9. Main sources of households' and non-incorporated businesses' external finance by decade, 1970-2014

	1970-1979	1980-1994	1995-1999	2000-2007	2008	2009-2014
Trade credit and short-term loans	55%	44%	30%	8%	-2%	10%
Mortgage loans	31%	24%	26%	51%	46%	21%
Bank loans and advances	12%	23%	20%	21%	9%	38%
Amount payable	0%	0%	2%	4%	18%	17%
Other liabilities	3%	7%	15%	16%	28%	14%

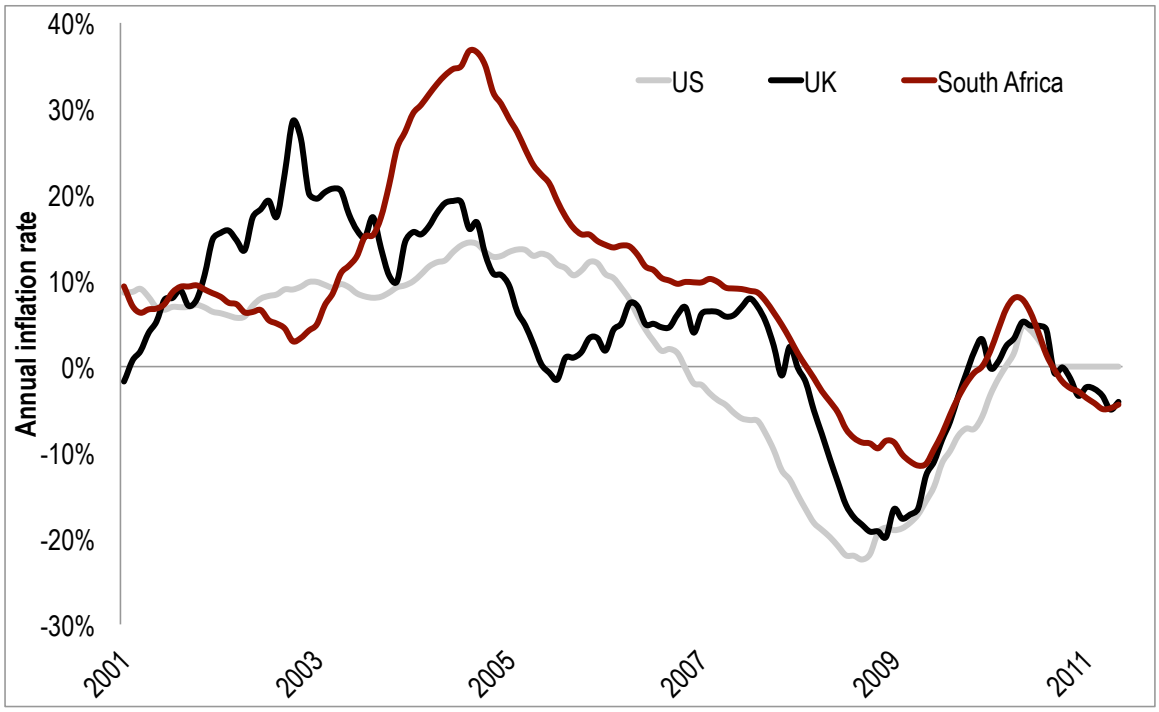
Source: SARB, 1994, SARB, 1995a-2015a.

The latter move coincided with the inflation of the South African real estate market. Between the mid-1990s and the mid-2000s, South Africa experienced some of the strongest inflationary pressures in global housing markets. Its house price inflation is comparable to that seen in Ireland, where real prices for residential property almost tripled during that period (André, 2010). Real house price inflation averaged 14.2% annually during the years in the run-up to the global financial crisis, that is, between 2000 and 2007. For the period of strong South African growth (2003-2007), real price gains were well above price increases in the UK and the US – two economies known for their buoyant housing markets (see Figure 7.18.). At its peak, in August 2004, annual house price growth in real terms was 37% in South Africa.

What Table 7.9. also shows is that as much as non-financial firms have increasingly started to invest into other assets since the 1990s, households (and potentially non-incorporated businesses) have begun to use other types of liabilities as source of finance. This coincides with the period of financial deregulation in South Africa. Competition in credit and mortgage markets increased since interest rate caps and other rules were removed. As mentioned

before, other financial assets are likely to mainly consist of financially innovative instruments, often issued by non-bank financial institutions.

Figure 7.18. Real price inflation of residential property in US, UK and South Africa



Source: Absa House Price Index data accessed through Global Insight Southern Africa (2014), Halifax (2014), S&P/Case-Schiller (2014), inflation data from: Bureau of Labor Statistics (2014), ONS (2014).

These instruments will be examined more closely in the following section. It should be stressed once again that non-incorporated businesses typically struggle to obtain external finance because of their limited assets. Hence, while they are the ones who most likely lost out significantly when non-financial firms shifted away from trade credit provision, they are unlikely to be prime clients obtaining other (that is, financially innovative) liabilities. These are probably rather given to households.

7.4.2. The impact on South African financial intermediaries

This section traces the destinations of corporate liquidity. It will be argued that in South Africa corporate liquidity supports property price inflation, because it tends to be channelled through domestic banks into mortgage loans. Cash and deposits together with other financial assets account for around 60% of the

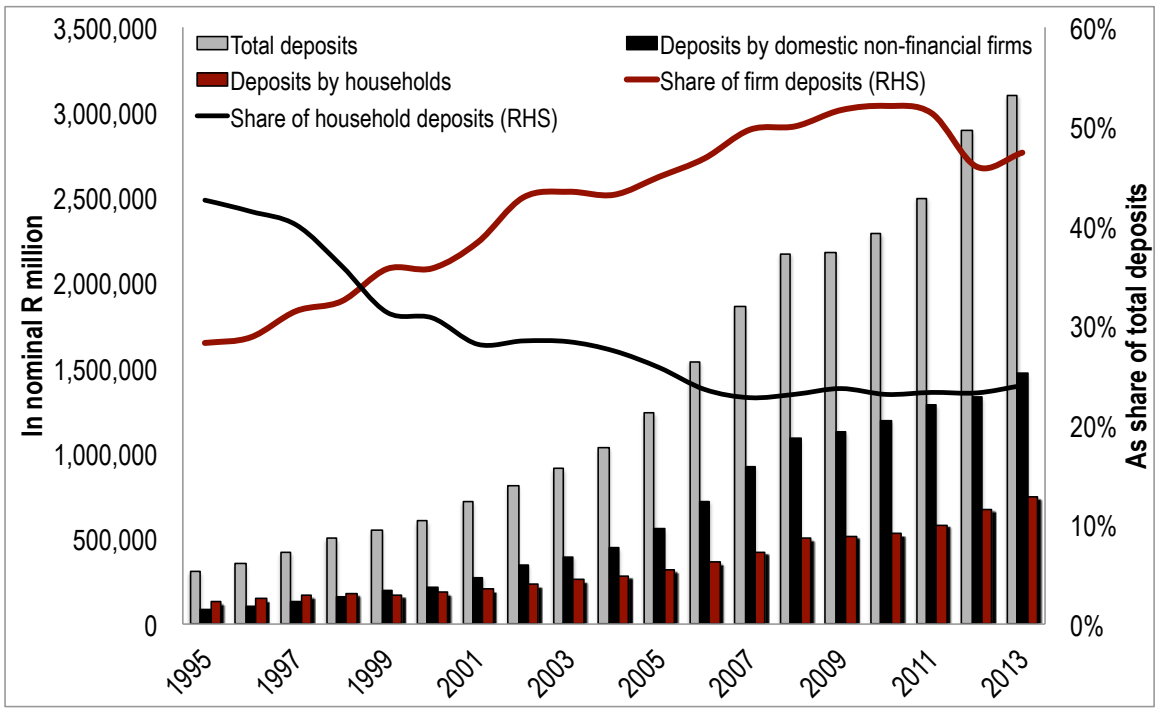
stock of financial assets held by private-sector non-financial firms. By contrast, financial receivables and trade and short-term credit – both instruments which provide suppliers and clients with trade credit supporting productive operations and sales – only account for around one fourth of the total financial asset stock amassed by non-financial corporations in the private sector. Hence, financial operations in support of liquidity management appear of greater importance to these companies than financial transactions supporting productive operations. As argued in chapter 3, this phenomenon is called overcapitalisation.

Crucially, this result depends on South Africa's status as an emerging market. Of course, the author does not subscribe to the loanable funds model, where creation of loans is only possible if deposited savings increase. This thesis firmly stands with the concept of endogenous money, acknowledging that loans create deposits. However, as shown by Chick in her influential stages of banking evolution (see chapter 5), for reserves not to be a constraint on credit creation at all, the central bank needs to accept full responsibility for financial stability. This goes hand-in-hand with a stable and low interest rate policy (Chick, 1992). Importantly, this is arguably not the case in South Africa where interest rates are relatively (some would say 'ridiculously', Bond, 2005, p. 98) high and often driven by portfolio inflow considerations.[12] Thus, in this situation corporate liquidity on bank balance sheets can facilitate credit creation. Therefore, the agency question is answered in favour of non-financial corporations.

[12] For an in-depth analysis of the detrimental impact of high interest rates on South African growth see Isaacs (2014) who argues that high interest rates are in line with the interests of large South African corporations (for example when they transfer their listing abroad) and relatively low inflation encourages financialisation. If this is the case, inflation targeting and monetary policy more broadly support the interests of large non-financial companies, rather than those of local banks. When thinking back of the question about agency in the relationship between banks and large non-financial businesses, it seems that large corporations once again have the upper hand.

In the late 1990s, private-sector corporate deposits – in contrast to household deposits – became the main source of funds for South African banks. Generally, customer deposits make up the bulk of financial liabilities on the balance sheets of banks in South Africa. Between 2008 and 2013, deposits amounted on average to 85% of total liabilities for South African banks (SARB 2010b-2014b). However, traditionally South African banks held mostly household deposits as their liabilities. This is illustrated in Figure 7.19. below.

Figure 7.19. Deposits held with South African banks, 1995-2013



Source: SARB, 1996a-2014a, SARB, 1996b-2014b.

In the mid-1990s, half of all deposits held in South African banks came from households, while only around one quarter belonged to private-sector non-financial firms, with the balance made up by deposits held by financial institutions (including banks themselves), public entities and foreign residents. Since then, corporate deposits have grown at a pace which by far outstripped growth in household deposits. As a consequence, by 1999 private-sector non-financial firms had taken over from households the position of major depositors, accounting for more than 50% of total deposited funds in South African banks by 2009. This share has fallen somewhat since, nevertheless

remaining close to 50% of total deposits. Hence, South African banks are not only the main destination for the liquidity held by private-sector non-financial firms, but equally, private-sector non-financial firms are also the biggest depositor group with South African banks.

The question arises what South African banks did with the substantial volume of liquid financial assets they received from their corporate clients. The majority of assets held by South African banks are loans and advances to customers. Between 1995 and 2013 on average 74% of total banks assets were loans and advances (SARB, 1996b-2014b). Within this asset group mortgage loans are the single biggest category. In 2013, 38% of total loans and advances by South African banks were mortgage loans. Around three quarters of these mortgages (that is 29% of all loans and advances extended by banks in 2013) were home loans, while one quarter (or 9% of all loans and advances) were commercial mortgages.[13]

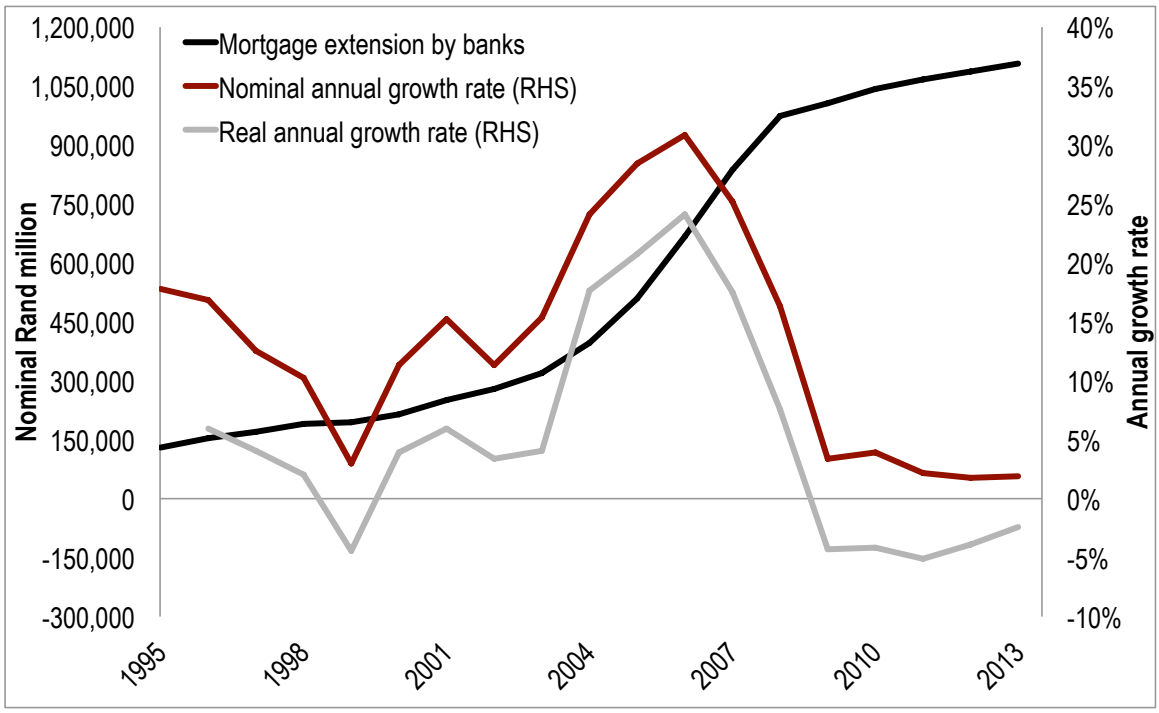
Figure 7.14. above illustrates that mortgages have become an asset of increasing importance on the balance sheets of South African banks, because their share in overall loans increased during the 2000s. For both types of financial intermediaries – banks as well as other financial (non-bank) institutions – mortgage finance gained in importance as an asset class during the 2000s. Mortgage extension by South African banks had accounted for a mere 35% of total loans and advances in 2001, while this share increased to 46% by 2010.

There has been an acceleration of mortgage volumes extended by South African banks. In constant 2010 Rand mortgage extension rose from around R400bn in 1995 to R1trn by 2010, declining somewhat subsequently to about R930bn in 2013. The increase in the total mortgage volume advanced to South African households and corporations rose sharply between 2004 and 2007 (see Figure

[13] This is true for the years between 2008 and 2013 (SARB 2009b-2014b). SARB only started releasing disaggregated mortgage data, distinguishing between home loans and commercial mortgages, in 2009.

7.20.). In real terms these years saw mortgage growth of 20% on average and 24% at its peak in 2006. These years coincide with particularly strong growth in deposits by private-sector non-financial firms (see Figure 7.19.). This is not to say that rising deposit growth causes increased credit extension. However, rising liabilities on banks' balance sheets did necessitate asset creation on the part of the banks to balance this development. Hence, corporate deposit growth might have encouraged banks to extend mortgage finance, especially since house prices were on the rise.

Figure 7.20. Mortgage extension by South African banks, 1995-2013



Source: SARB, 1995b-2014b.

Over the 2000s, consumer loans in general have become an increasingly important asset for South African banks. Table 7.10. provides the sectoral share in overall outstanding loans that benefited the FIRE industry and households. The four major South African banks are listed: Absa, FirstRand, Nedbank and Standards Bank. In the early 2000s, these four together owned 75% of total banking assets in South Africa (Falkena et al., 2002). Thus, it is reasonable to assume that their loan books are representative for South African credit extension in general.

The figures in Table 7.10. are arranged by time period, starting in the late 1990s, covering the pre-crisis 2000s, the crisis itself, and the post-crisis period until 2013. Data was extracted from the banking groups' annual reports. Therefore, the availability and degree of disaggregation vary. It is striking that, during the run-up to the crisis, the largest sectoral share in credit extension flowed to households. The second most important borrower for South African banks was the FIRE sector, which at that point benefitted from the real estate boom in the country. To put things into perspective, it should be noted that credit to the manufacturing sector (typically the next largest loan recipient alongside the service industry) accounted for a mere 6% of outstanding loans between 2000 and 2007.

Table 7.10. Sectoral shares in total outstanding credit for the four major South Africa banks

	Absa		First Rand		NedBank		Standard Bank	
	FIRE	Households	FIRE	Households	FIRE	Households	FIRE	Households
late 1990s			16%	31%	22%	37%		
2000-2007	19%	55%	18%	48%	24%	40%	19%	50%
2008			17%	55%	24%	52%	17%	56%
2009-2013			17%	56%	24%	39%	22%	53%

Source: Annual reports by Absa, 2003-2014, First Rand, 2000-2014, Nedbank, 1998-2014, Standard Bank, 2002-2014.

Hence, banks directly contributed to the build-up of financial fragility in South Africa by increasingly lending to FIRE businesses and households in the course of the early 2000s. Most importantly, non-financial firms' liquidity management facilitated this development. Following the direction of financial flows set out in this chapter it can be argued that – fuelled by foreign capital inflows – companies' financial operations contributed to the price inflation in South African property markets. South African (private-sector) non-financial corporations draw a substantial share of their liquid funds from abroad, issuing equity purchased by foreign investors (as shown in part 7.3.). To counter their liabilities non-financial firms manage their liquidity actively, holding between 40% and 60% of financial assets in highly liquid instruments.

Domestic banks are under pressure to create assets to counter this inflow of liabilities (that is, the increase in corporate deposits). Thus, these are likely to either cause asset price inflation or exaggerate present inflationary dynamics especially in the real estate market. In the 2000s, South African property markets were inflating noticeably. Banks had been increasing their share of mortgage loans in total loans since 2003 (see Figure 7.14.), channelling financial funds into the property markets. The inflationary process attracted increasing investment, further raising prices until mortgage extension stalled in 2008, and, in fact, contracted in real terms in 2009. Hence, corporate liquidity management can contribute to asset and – in this specific case – house price inflation. In an emerging market, foreign financial inflows play a crucial role because they can make the issuance of equity attractive for listed non-financial firms in a rising market. The possibility that the dynamics in the capital market might reverse, also make it necessary for these companies to hold on to large volumes of liquidity, if they want to retain a flexible balance sheet. Liquidity provides them with the flexibility to shrink their balance sheet – through debt pay-offs and share buybacks at any given time – and to acquire other companies and subsidiaries.

Hence, the financial operations of non-financial firms have an impact on banks' balance sheets, as the case of South Africa demonstrates. The corporate liquidity preference results in the creation of large volumes of liabilities for banks. Banks are in turn induced to counter this development by the creation of assets. In the case of South Africa, these assets are mainly loans. This might have historical and regulatory reasons because South African corporations remain somewhat restricted in foreign direct investment. It is perfectly conceivable that a similar effect can be found on the balance sheets of banks and other financial institutions in advanced economies, where corporate liquidity preferences have been on the rise since the 1980s. Here, in the run-up to the last financial crisis

increasingly exotic assets were purchased by banks to create assets, balancing growing liabilities.

7.5. Summary and conclusion

This chapter has explored the macroeconomic impact of the rising corporate liquidity preference among South African NFFs. Flow of funds analysis has shown that non-financial corporations in South Africa historically engaged extensively in financial investment, while financing the majority of their gross capital formation internally. In the New South Africa, which is often seen as the era of financialisation, these companies have changed their financial operations, rather than simply intensifying them. The change consisted of a reduction in trade credit towards households and non-incorporated firms, and the increased holding of cash, bank deposits and other financial assets. Non-financial firms, thus, increased their liquidity preference as was documented in the microeconomic data discussed in chapter 4.

This shift of uses of funds by non-financial corporations is particularly likely to have hurt non-incorporated businesses, which were most probably major beneficiaries of trade credit in the past. Small businesses in general struggle to access external finance and non-incorporated firms even more so. As discussed in chapter 3, South African informal firms have historically had strong links to the formal sector, for instance in the alcohol industry. With a reduction of trade credit (measured as share of GDP), both the activities of and the employment provided by these very small companies suffers. This altered liquidity management behaviour of non-financial firms is part of the financialisation story. Thus, this chapter reveals the exact transmission mechanism through which financialisation hurts productive economic activity and employment, as often claimed without much thorough explanation by financialisation proponents.

Importantly, the intensified liquidity management by non-financial companies impacts the balance sheet of South African banks, facilitating the build-up of financial fragility. Non-financial firms obtain much of their external finance through equity issuance, which (as stressed by the capital market inflation theory discussed in chapter 2) necessitates the holding of liquid assets to avoid an evaporation of assets and effective insolvency during recessions. In South Africa, these corporations invest into financial (and mostly Rand-denominated) assets that become liabilities for domestic banks. Banks are then under pressure to generate assets matching their liabilities. This happens mainly in the form of mortgage lending and credit extended to the FIRE sector. Bank credit flowing into the real estate market substantially inflated house prices during the early 2000s. Therefore, non-financial firms' liquidity holdings have contributed to the house price boom in South Africa.

Crucially, the financial operations of non-financial firms had an impact on banks' balance sheets in South Africa during this period. Hence, the Kaleckian idea that non-financial firms' investment decisions drive credit extension is confirmed. The agency question posed in chapter 5 is answered in favour of non-financial corporations. In fact, this finding goes beyond the German idea that investment leads credit. Here, non-financial companies' financial transactions induced credit extension; not, as sometimes claimed by financialisation proponents, because non-financial firms ceased to be banks' clients as they moved to finance their gross capital formation through capital markets (to the contrary, non-financial firms made stronger use of bank credit for productive invest between 2000 and 2007), but because their liquidity holdings grew so markedly over the same period.

Chapter VIII Conclusion

8.1. Summary

This thesis set out to examine the research question: What role do financial operations play in the activities of non-financial firms and what impact do they have on the macro economy? The chosen analytical lens for the investigation are the rising corporate cash holdings among non-financial firms. The South African economy with its relatively deep financial markets has elicited clear predictions from orthodox and heterodox economic theory: mainstream economists and policy makers expect South Africa's liberalised financial institutions to support rapid economic growth driven by business investment (see Jones, 2009; BRICS, 2012; National Planning Commission, 2012), while financialisation researchers believe non-financial corporations engage in financial speculation, which jeopardises growth (Ashman, Fine, & Newman, 2011; Ashman, Mohamed, & Newman, 2013; Ashman & Fine, 2013; McKenzie, 2013; Marais, 2011).

To assess these competing views on non-financial firms' financial operations the thesis followed a Kaleckian methodology, understanding micro and macro economic phenomena as varying dimensions of the same underlying processes. Therefore, the argument was organised in two parts, with chapters 2 through 4 illuminating the micro level, while chapters 5 to 7 dealt with the macro perspective. For each part three guiding analytical questions were formulated. In part one these questions asked:

(1) What is the role of financial operations within the operations of non-financial businesses?

(2) Which non-financial businesses are considered when analysing financial operations? And (3) why might non-financial firms increase their holdings of liquid assets (such as cash and cash equivalents)?

Conversely, the macro analysis in part two was guided by the following questions:

(1) What is the macroeconomic role of financial institutions?

(2) What (or who) drives credit extension?

And (3) how are non-financial companies as a whole positioned vis-à-vis financial institutions?

The findings of the thesis can be summarised as follows. The literature review presented in chapter 2 showed that corporate finance theory offers little guidance on non-financial companies' financial operations and liquidity holdings. The theory is more interested in the financial instruments issued by large corporations, than in non-financial businesses' financial and productive dealings, giving its clear focus on large listed non-financial companies. To explain the empirical observation that cash holdings on the balance sheets of non-financial corporations have secularly increased in major OECD countries over the past two decades or so, mainstream economists have identified several motives (of non-financial corporations) to hold cash and cash equivalents. Backed by empirical evidence, the precautionary motive, inspired by Keynes's liquidity preference theory, is seen as one of the most influential ones within this literature.

By contrast, many unconventional economists are sceptical towards the financial dealings of non-financial firms, suspecting a harmful impact on productive operations, and particularly investment. Thus, they stress the speculative motive as a potential reason for non-financial companies rising liquidity holdings. This is the one motive that hardly figures in mainstream analyses of non-financial businesses' liquidity holdings.

Chapter 2 also demonstrated that research agendas across mainstream and heterodox economics tend to concentrate on large non-financial corporations, leaving aside the issue of firm heterogeneity. The Kaleckian economics tradition, however, explicitly emphasises that firms vary with respect to their size, ability to access external finance, patterns of competition and ability to

generate profit. Therefore, this thesis adopted a Kaleckian understanding of non-financial firms' financial operations, allowing for the existence of a rentier firm (Toporowski, 1993). The rentier firm generates financial income alongside profit from production. Crucially, the motivation of the rentier firm does not have to be speculative, but can in fact be driven by precaution as mentioned by Kalecki (1991[1954]) and elaborated by Toporowski (1993). In either case, rentier firms become overcapitalised, meaning they hold more liquidity than necessary for their productive operations.

Chapter 3 incorporated the Kaleckian understanding of non-financial firms and their financial operations into balance sheet analysis. The 'comprehensive balance sheet approach' (coined by the author and) developed here goes beyond the mainstream focus on individual or aggregate net worth, which disregards the size of a balance sheet, netting out assets against liabilities. Conforming to the assessment of critical accountants, the comprehensive balance sheet approach includes qualitative information contained in firms' financial statements and annual reports. The thesis developed an original overcapitalisation ratio, which flags the overcapitalisation of non-financial firms, helping to identify their motives for large liquidity holdings.

The proposed methodology targeted listed non-financial corporations due to limited data availability. Crucially, chapter 3 surveyed the characteristics and heterogeneity of South African non-financial companies in detail to allow for a better understanding of the impact that financial operations by listed non-financial companies have on other domestic businesses and the economy as a whole. It documents the link between large formal non-financial companies and small non-incorporated non-financial enterprises, which have been strong in South Africa in the past.

Subsequently, chapter 4 implemented the proposed methodology for assessing evidence on overcapitalisation among listed non-financial corporations in South Africa, in aggregate, by sector and individually. In response to questions 1 (What role do financial operations play in the dealings of non-financial

businesses?) and 3 (Why has the liquidity preference of non-financial corporations increased in South Africa over the past decades?) the main firm-level findings of the thesis are that:

The surveyed overcapitalised non-financial firms have both precautionary as well as speculative intentions. A major reason to hold large amounts of cash for non-financial corporations is the ability to acquire business interests, be they subsidiary companies or, in the case of a resource-rich economy like South Africa, mines. These acquisitions can be made either with the intention of generating cash flow from operations, or to reap profits from value gains in the acquired business assets. Hence, an important finding is that the distinction between productive and speculative activity is in fact often blurred, and that productive and financial operations are often closely intertwined.

The rising liquidity preference among South African listed non-financial corporations is shaped by the country's geographic specificities, such as its mineral endowments. Mining companies, which have moulded the South Africa economy since the early beginnings of local capitalism, undertake much of the financial dealings among non-financial business. During the 1990s, a change in financing patterns among the large local mining-finance houses has resulted in a large number of mining exploration companies being forced to finance themselves outside of the mining-finance houses' structures. Consequently, these risky businesses units have attempted to raise capital on the JSE. Previously, when exploration companies were part of large company groups, these mining-finance houses could take advantage of economies of scale in their provision of liquidity to a large number of exploration projects, reducing the overall demand for liquidity. If not part of a profitable company group, those individual businesses now need to overcapitalise to ensure their survival until exploration is successful, at which point when they can sell their mining rights or start actual mining activity.

To explore the macroeconomic implications of the raised liquidity preferences among listed non-financial corporations in South Africa, chapter 5 reviewed the

role of the financial system in mainstream and heterodox economic theory. In conventional economics, the role of finance is one of financial intermediation and, more recently, risk management. In heterodox economic theory, the financial system is often more than a mere intermediary; it rather engages in credit creation, potentially driving business activity. Recent mainstream and the heterodox literature fundamentally differ in their understanding of credit: While it is exogenously determined (through the loanable funds framework) for conventional economists, it is endogenously created for heterodox writers. Within the heterodox tradition, the split runs along the lines of agency: a German-language tradition exists that ascribes the agency behind financial transactions to non-financial businesses. In contrast, Keynes, most of the post-Keynesians and much of the financialisation literature see the agency with financial institutions and non-financial companies as victims of increasing financial power in the economic system.

To analyse the South African economy to answer the questions about the role of financial institutions in the economy, the driving force behind credit expansion and the agency (or power) in the relations between finance and non-financial business flow of fund analysis is used. Chapter 6 reviewed the (old) institutionalist origins of this type of analysis. Additionally, an historical overview of the origins of South African banking, mining-finance houses and the stock exchange illustrate that finance and non-financial business have always been closely intertwined in the country. Historically, mining corporations established themselves as a dominant economic force, being able to also attain a financially powerful position. Consequently, the question of power in the relationship between financial institutions and non-financial corporations is historically answered in favour of non-financial firms, specifically, mining business.

Finally, chapter 7 revealed the macroeconomic impact of the rising corporate liquidity preference among South African non-financial firms. In the New South Africa, which is often seen as the era of financialisation in the country,

these non-financial companies have changed their financial operations rather than intensifying them. The change consisted of a reduction in trade credit towards households and non-incorporated firms, and an increased holding of cash, bank deposits and other financial assets. This shift of uses of funds by non-financial corporations is particularly likely to have hurt non-incorporated business, which were most probably a major beneficiary of trade credit in the past. The intensified liquidity management by non-financial companies impacts the balance sheet of South African banks, facilitating the build-up of financial fragility.

Non-financial firms obtain much of their external finance through equity issuance, which necessitates the holding of liquid assets to avoid an evaporation of assets and effective insolvency during recession. In South Africa, these corporations invest into financial assets that become liabilities for domestic banks. Banks are then under pressure to generate assets, matching their liabilities. This happens mainly in the form of mortgage lending and credit extended to the FIRE sector. Bank credit flowing into the real estate market has substantially inflated house prices during the early 2000s. Therefore, non-financial firms' liquidity preference has contributed to the house price boom in South Africa. This result depends on South Africa's status as emerging market, because the SARB's actions are often driven by a desire to attract foreign capital inflow or avoid the withdrawal of such capital, rather than an embracing of low and stable interest rates. Thus, in this situation corporate liquidity on bank balance sheet's can facilitate credit creation.

8.2. Major findings

The thesis provides original empirical and theoretical insights. Empirically, this thesis finds evidence for the overcapitalisation of NFFs in South Africa, especially since 1994. There are two types of companies that are driving the overcapitalisation trend. On the one hand, mining companies hold substantial liquid assets out of precaution due to the inherently risky nature of mining,

especially mining exploration. On the other hand, large established companies (including mining firms) hold liquid assets to support their mergers and acquisitions activity. These microeconomic findings are consistent with macroeconomic data, which show that non-financial firms in aggregate have increasingly been acquiring liquid assets since the 1990s. NFFs' liquidity management, while beneficial for the individual companies, has an adverse effect on economic growth and financial stability in the country. NFFs have shifted away from providing trade credit to non-incorporated informal businesses towards holding liquid assets with domestic banks. Since informal businesses have notoriously bad access to formal lending, they have lost an important source of external finance. This is likely to have weakened growth and employment creation in South Africa. The liquid assets held by non-financial corporations are recycled through the domestic banking sector and mainly end up as mortgage lending and credit to the FIRE sector. As consequence, NFFs' liquidity management induces credit extension by domestic banks, which fuels the South African real estate bubble.

From a theoretical perspective, the thesis argues that the South African financial sector, and especially the big banks, did historically not contributed to the country's economic and industrial development because long-term funding was not made available. Thus, the thesis refutes the popular mainstream perception (Amphlett, 1914; Jones, 2009) and argues that, in fact, South African non-financial companies, and especially mining conglomerates financed much of their investment internally, especially during the second half of the 20th century. Specifically, the bank-based market-based dichotomy is of little use in understanding the development of South African finance. Here, the mining sector, hence a specific part of the non-financial corporate sector, was instrumental in shaping domestic financial institutions. This historical experience cannot be captured by the simplistic dichotomy used in economics to classify financial systems.

Equally the heterodox (financialisation) argument misses out on layers of complexity by lazily accusing large South African NFFs of financial speculation that emerged as consequence of the country's financialisation since the mid-1990s. In fact, NFFs always invested heavily into financial instruments in South Africa. Crucially, NFFs changed (rather then intensified) their financial investment strategies in the course of the 1990s, shifting away from trade credit towards active liquidity management. Thus, this thesis reveals the mechanisms behind the heterodox 'gut feel' that finance in South Africa is not contributing towards investment and employment creation, but rather weakening the local economy. Consequently, the thesis argues that the financialisation literature oversimplifies financial activity by NFFs by either reducing it to financial speculation or a shift from bank-based to market-based finance. As consequence, in much of the financialisation literature NFFs are merely reacting to changes under way in the financial sectors of advanced and emerging economies. The case of South Africa shows that NFFs can and do actively shape financial structures, for instance through their own liquidity management.

8.3. The significance of the findings

The findings outlined above have an important significance for micro- and macroeconomic theory. They also contain critical methodological insights. The microeconomic analysis in this thesis shows that real and financial transactions of non-financial firms are more closely intertwined than typically assumed. Non-financial businesses do not merely undertake financial transactions to facilitate their productive investment, which is a central assumption in mainstream economic theory as discussed in chapter 5. In fact, non-financial firms can be rentiers in the sense that they generate financial profits alongside profit from productive operations. The former can be an important supplement to, and in extreme cases even completely replace, (missing) operational income. However, rentier incomes do not have to be speculative, as often implied in the financialisation literature. Moreover, productive investment, which is often

hailed among heterodox economists as the only desirable type of investment, can be highly speculative; speculative in the sense, that a firm does not use it for income generation, but undertakes it with the aim of generating capital gains. Mining assets lend themselves to speculation, since mining rights, subsidiaries or mines themselves can be sold on with a capital gain on the investment, if commodity prices have increased meanwhile. But equally, holding companies can buy and sell subsidiaries or shares in subsidiaries, generating profits that way. Here, the blur between financial and productive investment becomes apparent: if a company holds a small share of the total stock volume in another company this would count as financial investment. However, if it possesses controlling interest (the UN sets the threshold for control as low as 10% of total voting power) the investment would be labelled as productive.

The listed non-financial firms identified as overcapitalised in this thesis often use liquid assets (including financial instruments) as insurance against potential financial (and productive) difficulties. Mining exploration companies are a prime example, since they typically amass large volumes of liquidity to bridge the time before mining rights can be sold on, or actual mining activity can be started. This period is typically of uncertain length. Hence, their behaviour is individually rational and guards these companies from financial troubles. However, on the macroeconomic level this behaviour induces greater financial fragility in the South African economy as a whole because it contributes to asset price inflation in the real estate market.

The liquidity holdings of large non-financial companies can facilitate credit expansion in an emerging market like South Africa, where the central bank is not willing to fully accept the role to provide financial stability and – crucially – low and stable interest rates. Therefore, non-financial firms and their financial transactions shape economic dynamics actively. This is an important theoretical insight because mainstream theory tends to neglect financial operations of non-financial firms, while heterodox economists have a tendency to perceive non-

financial businesses as victims of their financial transactions, for instance, under pressure to generate shareholder value.

In contrast, Kalecki and the German tradition discussed in chapter 5 stressed the important role that non-financial companies have in the financial system of an economy because they drive credit extension through their investment decisions. The thesis finds that in South Africa non-financial companies are powerful economic and financial agents. The historical overview provided in chapter 6 supports these findings, showing that mining companies, i.e. non-financial firms, have influenced the South African financial system since the beginnings of capitalist production. This thesis finds that non-financial corporations' investment decisions (including the decision to hold liquid financial assets) drives credit expansion, since it puts banks under pressure to generate other balance sheet assets, off-setting non-financial corporates' liquid asset holdings in South African banks.

Here, firm heterogeneity must be factored into the analysis because only large non-financial corporations are powerful economic and financial agents. Over the past two decades, South African non-financial businesses have noticeably shifted their uses of funds from providing trade credit to households and small informal business towards amassing innovative financial instruments. They have neither increased the volume of their financial investment (when measured as share of capital formation), nor shifted their funding towards capital market. These two characteristics are often identified as symptoms of financialisation. Nevertheless, South Africa is generally perceived as suffering from financialisation, which is believed to subdue investment and employment creation. However, the financialisation narrative is often too simplistic, failing to state how a growing financial sector might harm growth and development.

This thesis provided evidence that the link between large corporations and small (often informal) businesses has broken down in South Africa. In this way, it explains the underlying process that has a detrimental effect on economic activity. Since small and informal enterprises have poor access to finance in

South Africa, their loss of trade credit from large liquid companies is likely to put them under financial pressure during business cycle downswings, when cash flow wanes. This is another way in which financial fragility might increase on the macroeconomic level. Thus, non-financial companies liquidity facilitates house price inflation on the one hand, while weakening the financial position of smaller (informal) non-financial businesses.

Methodologically, the thesis underlines and exemplifies the need for the inclusion of qualitative data because processes such as those described above cannot be captured or explained by quantitative data alone. The thesis, therefore, champions mixed methods and the incorporation of historical context, through in-depth case study work, into the analysis of complex economic processes and problems.

The originality of the thesis lies in its contribution to the understanding of the processes behind the financial operations of non-financial companies, illustrating in particular how non-financial companies utilise financial operations to support their speculation in real assets. In consequence, these firms are overcapitalised, i.e. hold liquid assets beyond their requirements for productive operations. The research also contributes to the growing literature on financialisation in emerging economies. The thesis develops an operationalisation of the concept of overcapitalisation and an original adaptation of existing flow-of-funds analysis of corporate investment.

8.3. Future research

To address the data limitations encountered, future research avenues could aim at gathering balance sheet information for small and medium-sized non-financial companies, as well as for micro and very small enterprises. This would provide a fuller picture of firm heterogeneity. Similarly, interviews with chief financial officers (or similarly placed key informants) of overcapitalised non-financial corporations would be desirable to obtain further qualitative information about the liquidity management strategies of these companies.

However, just like much of the qualitative information contained in annual reports, such data would have to be interpreted critically and triangulated carefully, since company representatives are always concerned to present their businesses in a favourable light. This is the reason why the author not yet embarked onto such a project, preferring to first gather extensive data and build up knowledge about the South African corporate sector.

Bibliography

Abiad, A., Detragiache, E., & Tressel, T. (2008). *A new database of financial reforms*. Washington, DC: International Monetary Fund.

Absa Group Limited (2003-2014). *Annual report*, Johannesburg: Absa Group Limited [12 issues in total].

Acharya, V., Davydenko, S. A., & Strebulaev, I. A. (2012). Cash holdings and credit risk. *Review of Financial Studies*, *25*(12), 3572–609.

Aghion, P., Braun, M., & Fedderke, J. (2006). *Competition and productivity growth in South Africa* (Working Paper No. 132). Boston: Center for International Development at Harvard University.

Aglietta, M., & Breton, R. (2001). Financial systems, corporate control and capital accumulation. *Economy and Society*, *30*(4), 433–66.

Akyüz, Y. (2015). *Internationalization of finance and changing vulnerabilities in emerging and developing economies* (Research Paper No. 60). Geneva: South Centre.

Al-Najjar, B. (2013). The financial determinants of corporate cash holdings: Evidence from some emerging markets. *International Business Review*, *22*(1), 77–88.

Allen, F., & Gale, D. (2000). *Comparing financial systems*. Cambridge, MA: MIT Press.

Allen, F., & Santomero, A. M. (1997). The theory of financial intermediation. *Journal of Banking & Finance*, *21*(11), 1461–85.

Allen, F., & Santomero, A. M. (2001). What do financial intermediaries do? *Journal of Banking & Finance*, *25*(2), 271–94.

Almeida, H., Campello, M., & Weisbach, M. (2002). *Corporate demand for liquidity* (Working Paper No. w9253). Cambridge, MA: National Bureau of Economic Research.

Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance*, *23*(4), 589–609.

Álvarez, R., Sagner, A., & Valdivia, C. (2012). Liquidity crises and corporate cash holdings in Chile: Liquidity crises and cash holdings in Chile. *The Developing Economies*, *50*(4), 378–92.

Amphlett, G. (1914). *History of the Standard Bank of South Africa Ltd. 1862-1913*. Glasgow: Robert Maclehose and Co. Ltd.

Ando, A., & Modigliani, F. (1963). The "life cycle" hypothesis of savings: Aggregate implications and tests. *The American Economic Review*, *53*(1), 55–84.

Andreasson, S. (2011). Understanding corporate governance reform in South Africa: Anglo-American divergence, the King Reports, and hybridization. *Business & Society*, *50*(4), 647–673.

André, C. (2010). *A bird's eye view of OECD housing markets* (OECD Economics Department Working Papers No. 746). Paris: OECD (Organisation for Economic Cooperation and Development).

Andrews, G. S. (1975). The stock exchange. In A. Hamersma & N. H. H. Czypionka (Eds.), *Essays on the South African financial structure* (1st ed.). Johannesburg: Standard Bank of South Africa Limited.

Andrews, G. S., & Kok, W. J. (1984). The capital market. In H. B. Falkena, L. J. Fourie, & W. J. Kok (Eds.), *The mechanics of the South African financial system: financial institutions, instruments, and markets* (pp. 237–61). Johannesburg: Macmillan South Africa.

Ang, J. B. (2008). A survey of recent developments in the literature of finance and growth. *Journal of Economic Surveys*, *22*(3), 536–76.

Aoki, M. (1984). *The economics of the Japanese firm*. Amsterdam: North Holland.

Arcand, J.-L., Berkes, E., & Panizza, U. (2012). *Too much finance?* (Working Paper No. 12/161). Washington, DC: International Monetary Fund.

Arestis, P., & Glickman, M. (2002). Financial crisis in Southeast Asia: Dispelling illusion the Minskyan way. *Cambridge Journal of Economics*, *26*(2), 237-60.

Arestis, P., Demetriades, P., Fattouh, B., & Mouratidis, K. (2002). The impact of financial liberalization policies on financial development: Evidence from developing economics. *International Journal of Finance & Economics*, *7*(2), 109–21.

Arestis, P., Nissanke, M., & Stein, H. (2005). Finance and development: Institutional and policy alternatives to financial liberalization theory. *Eastern Economic Journal*, 245–63.

Argitis, G., Evans, T., Michell, J., & Toporowski, J. (2014). *Finance and crisis: Marxian, institutionalist and circuitist approaches* (Working Paper No. 39). Leeds: FESSUD.

Arndt, E. H. D. (1928). *Banking and currency development in South Africa (1652-1927)*. Cape Town and Johannesburg: Juta & Co., Ltd.

Aron, J., & Muellbauer, J. (2000). *Financial liberalisation, consumption and debt in South Africa*. Centre for the Study of African Economies, Department of Economics, University of Oxford.

Arrighi, G. (1994). *The long twentieth century: money, power, and the origins of our times*. London; New York, NY: Verso.

Arrow, K. J., & Debreu, G. (1954). The existence of an equilibrium for a competitive economy. *Econometrica: Journal of the Econometric Society*, *22*(3), 265–90.

Ashman, S., & Fine, B. (2013). Neo-liberalism, varieties of capitalism, and the shifting contours of South Africa's financial system. *Transformation: Critical Perspectives on Southern Africa*, *81*(1), 144–178.

Ashman, S., Fine, B., & Newman, S. (2011). The crisis in South Africa: Neoliberalism, financialization and uneven and combined development. *Socialist Register*, *47*(47), 174-95.

Ashman, S., Mohamed, S., & Newman, S. (2013). *Financialisation of the South African economy: Impact on the economic growth path and employment.* (UNDESA Discussion Paper). Geneva: United Nations Department of Economic and Social Affairs (UNDESA).

Asimakopulos, A. (1983). Kalečki and Keynes on finance, investment and saving. *Cambridge Journal of Economics*, *7*(3/4), 221–33.

Ayyagari, M., Beck, T., & Demirgüç-Kunt, A. (2003). *Small and medium enterprises across the globe: A new database* (Working Paper No. 3127). Washington, DC: World Bank.

Bain, A. D. (1973). *Flow of funds analysis in the formulation of economic policy*. Manchester: Manchester Statistical Society.

Bank of England. (1972). *An introduction to flow of funds accounting: 1952-1970*. Bank of England.

Barba, A., & Pivetti, M. (2008). Rising household debt: Its causes and macroeconomic implications--a long-period analysis. *Cambridge Journal of Economics*, *33*(1), 113–37.

Barr, G. D. I., & Kantor, B. S. (1994). The discount of net asset value, unbundling and shareholder interests. *De Ratione*, *8*(1), 44–59.

Barth, J. R., Li, T., Lu, W., & Yago, G. (2010). *Capital access index 2009, best markets for business access to capital*. Milken Institute.

Bartholomew, J. (1885). *Sketch map of South Africa, British possessions, July 1885*. Edinburgh: Scottish Geographical Magazine. Retrieved August 1, 2015, from the University of Texas Libraries: http://www.lib.utexas.edu/maps/historical/south_africa_1885.jpg.

Bates, T. W., Kahle, K. M., & Stulz, R. M. (2009). Why do U.S. firms hold so much more cash than they used to? *The Journal of Finance*, *64*(5), 1985–2021.

Baum, C., Schäfer, D., & Talavera, O. (2007). *The effects of industry-level uncertainty on cash holdings: The case of Germany* (Working Paper No. 637). Boston: Boston College Department of Economics.

Baumol, W. J. (1952). The transaction demand for cash: An inventory theoretic approach. *Quarterly Journal of Economics*, *66*(4), 545–56.

Beck, T., Demirgüç-Kunt, A., & Levine, R. (2000). A new database on financial development and structure. *World Bank Economic Review*, *14*, 597–605.

Beck, T., Demirgüç-Kunt, A., & Levine, R. (2009). *Financial institutions and markets across countries and over time data and analysis* (Policy Research Working Paper No. 4943). Washington, DC: World Bank.

Becker, J., Jäger, J., Leubolt, B., & Weissenbacher, R. (2010). Peripheral financialization and vulnerability to crisis: A Regulationist perspective. *Competition & Change*, *14*(3-4), 225–47.

Berglöf, E. (1988). *Capital structure as a mechanism of control: A comparison of financial systems* (Discussion Paper No. 48). Cambridge, Massachusetts: Harvard Law School.

Bernanke, B. S. (1983). *Non-monetary effects of the financial crisis in the propagation of the Great Depression* (Working Paper No. 1054). Cambridge, MA: National Bureau of Economic Research.

Bernanke, B. S. (1993). Credit in the macroeconomy. *FRBNY Quarterly Review*, 50–70.

Bernanke, B. S., & Gertler, M. (1989). Agency costs, net worth, and business fluctuations. *The American Economic Review*, *79*(1), 14–31.

Bernanke, B. S., & Gertler, M. (1995). Inside the black box: The credit channel of monetary policy transmission. *Journal of Economic Perspectives*, *9*(4), 27–48.

Bernanke, B. S., Gertler, M., & Gilchrist, S. (1999). The financial accelerator in a quantitative business cycle framework. In J. B. Taylor & M. Woodford (Eds.), *Handbook of macroeconomics, volume 1*. Elsevier.

Bernstein, P. L. (1992). *Capital ideas: The improbable origins of modern Wall Street*. New York, NY: Toronto: Free Press; Maxwell Macmillan Canada; Maxwell Macmillan International.

Berry, A., von Blottnitz, M., Cassim, R., Kesper, A., Rajaratnam, B., & van Seventer, D. E. (2002). *The economics of SMMEs in South Africa*. Pretoria: Trade and Industrial Policy Strategies (TIPS).

Bibow, J. (2005). *Liquidity preference theory revisited - To ditch or to build on it?* (Working Paper No. 427). Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.

Bigelli, M., & Sánchez-Vidal, J. (2012). Cash holdings in private firms. *Journal of Banking & Finance*, *36*(1), 26–35.

Bond, P. (2005). *Elite transition: From apartheid to neoliberalism in South Africa*. Scotsville [South Africa]: University of KwaZulu-Natal Press.

Borio, C. E. V. (1990). *Leverage and financing of non-financial companies: An international perspective* (BIS Economic Papers No. 27). Basel: Bank for International Settlement.

Brenner, R. (2003). *The boom and the bubble: The US in the world economy*. London: Verso.

BRICS (2012) *The BRICS report: A study of Brazil, Russia, India, China, and South Africa with special focus on synergies and complementarities*. New Delhi: Oxford University Press.

Bridge, G. (2004). Mapping the bonanza: Geographies of mining investment in an era of neoliberal reform. *The Professional Geographer*, *56*(3), 406–21.

Brown, S. I. (1978). The historical development of the use of ratios in financial statement analysis to 1933. In J. O. Horrigan (Ed.), *Financial ratio analysis, an historical perspective*. New York, NY: Arno Press, A New York Company.

Bruggemans, C. (2013, February 18). *Why corporates are holding on to their cash*. Johannesburg: Moneyweb. Retrieved May 1, 2013, from http://www.moneyweb.co.za/archive/r-738/

Bryman, A. (2012). *Social research methods* (4th ed). Oxford; New York: Oxford University Press.

Bureau of Labor Statistics (2014) *Consumer price inflation, 2001-2012*, Washington, DC: Bureau of Labor Statistics, United States Department of Labor.

Cardim de Carvalho, F. J. (2002). On Keynes's concept of the revolving fund of finance. In P. Arestis, M. Desai, & S. C. Dow (Eds.), *Money, macroeconomics and Keynes: Essays in honour of Victoria Chick*. London: Routledge.

Carmody, P. (2002). Between globalisation and (post) apartheid: The political economy of restructuring in South Africa. *Journal of Southern African Studies*, *28*(2), 255–75.

Carrington, J. C., & Edwards, G. T. (1979). *Financing industrial investment*. London: Macmillan.

Cassel, G. (1927, May 8). Nimmt die Börse Kapital in Anspruch? *Frankfurter Zeitung*. Frankfurt.

Cavalieri, D. (2003). *On the closure of the monetary circuit* (Working Paper No. 43846). Munich: Universität München.

Cecchetti, S. G., & Kharroubi, E. (2012). *Reassessing the impact of finance on growth*. (BIS Working Papers No. 381).

Cecchetti, S. G., & Kharroubi, E. (2015). *Why does financial sector growth crowd out real economic growth?* (BIS Working Papers No. 490).

Centre for Science, Technology and Innovation Indicators (CeSTII). (2006). *South African Innovation Survey 2005, dataset*. Pretoria: Centre for Science, Technology and Innovation Indicators (CeSTII).

Chabane, N., Goldstein, A., & Roberts, S. (2006). The changing face and strategies of big business in South Africa: More than a decade of political democracy. *Industrial and Corporate Change*, *15*(3), 549–77.

Chandler, A. D. (1994). *Scale and scope the dynamics of industrial capitalism*. Cambridge, MA: Belknap Press of Harvard University Press.

Chandrasekhar, C. P. (2013). Financialization as an obstacle to industrialization. In J. E. Stiglitz, J. Esteban, J. Lin Yifu, & E. Patel, *The industrial policy revolution II: Africa in the twenty-first century*. Palgrave Macmilliam.

Chandrasekhar, C. P., & Pal, P. (2006). Financial liberalisation in India: An assessment of its nature and outcomes. *Economic and Political Weekly*, 18 March, 975–88.

Chesnais, F. (1996). Introduction générale. In F. Chesnais (Ed.), *La mondialisation financière: genèse, coût et enjeux*. Paris: Syros.

Chick, V. (1992). The evolution of the banking system and the theory of saving, investment and interest. In P. Arestis & S. C. Dow, *On money, method and Keynes*. London; New York: Palgrave Macmilliam.

Chick, V. (2005). Lost and found: Some history of endogenous money in the twentieth century. In G. Fontana & R. Realfonzo, *The monetary theory of production: Tradition and perspectives* (pp. 53–66). Basingstoke, Hampshire; New York: Palgrave Macmillan.

Chilosi, A. (1982). Breit, Kalecki and Hicks on the term structure of interest rates, risk and the theory of investment. In M. Baranzini (Ed.), *Advances in economic theory* (pp. 80–9). Oxford: Basil Blackwell.

Chrometco Limited. (2007). *Annual report 2007*. Pretoria: Chrometco Limited.

Chrometco Limited. (2008). *Annual report 2008*. Pretoria: Chrometco Limited.

Chrometco Limited. (2011). *Annual report 2011*. Pretoria: Chrometco Limited.

Chrometco Limited. (2012). *Annual report 2012*. Pretoria: Chrometco Limited.

Čihák, M., Demirgüç-Kunt, A., Feyen, E., & Levine, R. (2012). *Benchmarking financial development around the world* (World Bank Policy Research Working Paper No. 6175), Washington, DC: World Bank.

Cohen, J. (1972). Copeland's moneyflows after twenty-five years: A survey. *Journal of Economic Literature*, *10*(1), 1–25.

Collier, P. M. (2012). *Accounting for managers: Interpreting accounting information for decision-making* (4th ed.). Hoboken, NJ: Wiley.

Committee of the Johannesburg Stock Exchange. (1948). *The story of the Johannesburg Stock Exchange 1887-1947*. Johannesburg.

Copeland, M. (1952). *A study of moneyflows in the United States*. National Bureau of Economic Research, Inc.

Corbett, J. (1987). International perspectives on finance: Evidence from Japan. *Oxford Review of Economic Policy*, *3*(4), 30–55.

Corbett, J., & Jenkinson, T. (1996). The financing of industry, 1970–1989: An international comparison. *Journal of the Japanese and International Economies*, *10*(1), 71–96.

Corbett, J., & Jenkinson, T. (1997). How is investment financed? A study of Germany, Japan, the United Kingdom and the United States. *The Manchester School*, *65*(S), 69–93.

Correa, E., Vidal, G., & Marshall, W. (2012). Financialization in Mexico: Trajectory and limits. *Journal of Post Keynesian Economics*, *35*(2), 255–75.

Corsetti, G., Pesenti, P., & Roubini, N. (1998). *What caused the Asian currency and financial crisis? Part I: A macroeconomic overview* (Working Paper No. 6833). Cambridge, MA: National Bureau of Economic Research.

Cozzi, G., & Toporowski, J. (2006). *The balance sheet approach to financial crises in emerging markets* (Working Paper No. 149). London: SOAS.

Crotty, J. (2003). *The neoliberal paradox: The impact of destructive product market competition and impatient finance on nonfinancial corporations in the neoliberal era* (Research Brief). Amherst, MA: PERI, University of Massachusetts Amherst.

Cruz, M., Amann, E., & Walters, B. (2006). Expectations, the business cycle and the Mexican peso crisis. *Cambridge Journal of Economics*, *30*(5), 701–22.

Davidson, S. (1997). Agency theory, insider ownership and corporate focus: Some South African evidence. *South African Journal of Accounting Research*, *11*(2), 51–68.

Davis, D., & Mongalo, T. (2013). *Companies and other business structures in South Africa*. Cape Town: Oxford University Press Southern Africa.

Dawson, J. C. (Ed.). (1996). *Flow-of-funds analysis: a handbook for practitioners*. Armonk, NY: M.E. Sharpe.

de Beer, B., Nhlapo, N., & Nhleko, Z. (2010). A perspective on the South African flow of funds compilation–theory and analysis. *IFC Bulletin*, *33*, 239–48.

de Brunhoff, S. (1976). *Marx on money*. New York: Urizen Books.

de Paula, L. F. R., & Alves, A. J. (2000). External financial fragility and the 1998-1999 Brazilian currency crisis. *Journal of Post Keynesian Economics*, *22*(4), 589–617.

Deeg, R. (2003). On the development of universal banking in Germany. In D. J. Forsyth & D. Verdier (Eds.), *The origins of national financial systems: Alexander Gerschenkron reconsidered*. London; New York: Routledge.

Deeg, R. (2010). Institutional change in financial systems. In G. Morgan (Ed.), *The Oxford handbook of comparative institutional analysis*. Oxford; New York: Oxford University Press.

Delen, D., Kuzey, C., & Uyar, A. (2013). Measuring firm performance using financial ratios: A decision tree approach. *Expert Systems with Applications*, *40*(10), 3970–83.

Deloitte. (2011). *IFRS in your pocket*. The Creative Studio at Deloitte. Retrieved February 4, 2013, from http://www2.deloitte.com/content/dam/Deloitte/dk/Documents/audit/IFRS-in-your-pocket-Deloitte.pdf

Delta Publishing Company. (2006). *Analysis and uses of financial statements*. Los Alamitos, CA: Delta Publishing Company.

Demir, F. (2007). The rise of rentier capitalism and the financialization of real sectors in developing countries. *Review of Radical Political Economics*, *39*(3), 351–9.

Devey, R., Skinner, C., & Valodia, I. (2006). *Second best? Trends and linkages in the informal economy in South Africa*. Cape Town: University of Cape Town, Development Policy Research Unit.

Dhaliwal, D. S., Huang, S. X., Moser, W. J., & Pereira, R. (2011). Corporate tax avoidance and the levelesel and valuation of firm cash holdings. *SSRN Electronic Journal*.

Dimand, R. (2007). Irving Fisher and his students as financial economists. In G. Poitras (Ed.), *Twentieth-century contributions, volume II*. Cheltenham: Elgar.

Dittmar, A., Mahrt-Smith, J., & Servaes, H. (2003). International corporate governance and corporate cash holdings. *The Journal of Financial and Quantitative Analysis*, *38*(1), 111-33.

Dollery, B. (2003). *The decline of the South African economy: Review note* (Working Paper Series in Economics No. 2003-6). Armidale: University of New England.

Donaldson, G. (1961). *Corporate debt capacity: A study of corporate debt policy and the determination of corporate debt capacity*. Boston: Division of Research, School of Business Administration, Harvard University.

Donne, M. (2013). *The UK gold*. Documentary.

Duménil, G., & Lévy, D. (2013). Managers in the dynamics of social change.

Retrieved May 6, 2014, from http://www.jourdan.ens.fr/levy/dle2013c.pdf

Dymski, G. A. (1999). *Asset bubbles and Minsky crises in East Asia: A spatialized Minsky approach*. Department of Economics, University of California-Riverside.

Dymski, G. A. (2014). The neoclassical sink and the heterodox spiral: political divides and lines of communication in economics. *Review of Keynesian Economics*, *2*(1), 1–19.

Easterly, W., Islam, R., & Stiglitz, J. E. (2001). Shaken and stirred: explaining growth volatility. In B. Pleskovic, & N. Stern (Eds.), *Annual World Bank conference on development economics* (Vol. 191). Washington, DC: World Bank.

Eichengreen, B. (2004). The challenge of financial instability. In *Copenhagen Consensus Challenge Paper*. Copenhagen.

Eichner, A. S. (2008). *The megacorp and oligopoly: micro foundations of macro dynamics* (Digitally print. version). Cambridge: Cambridge University Press.

Einzig, P. (1966). *Primitive money in its ethnological, historical and economic aspects*. Oxford: Pergamon Press.

Ellis, H. S. (1934). *German monetary theory, 1905-1933*. Cambridge, MA: Harvard University Press.

Epstein, G. (2002). *Financialization, rentier interests, and central bank policy*. Amherst: Department of Economics and Political Economy Research Institute, University of Massachusetts, Amherst.

Epstein, G., & Power, D. (2003). *Rentier incomes and financial crises: An empirical examination of trends and cycles in some OECD countries* (Working Paper No. 57). Amherst: Department of Economics and Political Economy Research Institute, University of Massachusetts, Amherst.

Erturk, I., Froud, J., Johal, S., Leaver, A., & Williams, K. (Eds.). (2008). *Financialization at work: Key texts and commentary*. London; New York: Routledge.

European Commission. (2003). International accounting standards IAS 1. *Official Journal of the European Union*, *261*, 5–53.

Eyraud, L. (2009). *Why isn't South Africa growing faster? A comparative approach* (Working Paper No. WP/09/25). Washington, DC: Internatinal Monetary Fund.

Falkena, H. B., Fourie, L. J., & Kok, W. J. (1984). *The mechanics of the South African financial system: Financial institutions, instruments, and markets*. Johannesburg: Macmillan South Africa.

Falkena, H., Abedian, I., Von Blottnitz, M., Coovadia, C., Davel, G., Magungandaba, J., Rees, S. (2002). *SME's access to finance in South Africa*. Pretoria: The Task Group of the Policy Board for Financial Services and Regulation.

Fama, E. F., & Miller, M. H. (1972). *The theory of finance*. New York, NY: Holt, Rhinehart and Winston.

Farhi, M., & Borghi, R. A. Z. (2009). Operations with financial derivatives of corporations from emerging economies. *Estudos Avançados*, *23*, 169–88.

Fazzari, S., & Variato, A. M. (1994). Asymmetric information and Keynesian theories of investment. *Journal of Post Keynesian Economics*, *6*(3), 351–70.

Feinstein, C. H. (2005). *An economic history of South Africa: conquest, discrimination, and development*. New York, NY: Cambridge University Press.

Fine, B. (2013). Financialization from a Marxist perspective. *International Journal of Political Economy*, *42*(4), 47–66.

Fine, B., & Rustomjee, Z. (1996). *The political economy of South Africa: From minerals-energy complex to industrialisation*. Boulder, CO: Westview Press.

Fine, B., & Saad-Filho, A. (2004). *Marx's capital* (5th ed). London: New York, NY: Pluto Press.

Fisher, F. M., & McGowan, J. J. (1983). On the misuse of accounting rates of return to infer monopoly profits. *The American Economic Review*, *73*(1), 82–97.

Fisher, I. (1930). *The theory of interest, as determined by impatience to spend income and opportunity to invest it*. New York, NY: Macmillan.

Fisher, I. (1933). The debt-deflation theory of great depressions. *Econometrica: Journal of the Econometric Society*, 337–57.

First Rand Bank Limited (2000-2014). *Annual report*, Johannesburg: First Rand Bank Limited [15 issues in total].

Fitzpatrick, J. P. (1978). A comparison of the ratios of successful industrial enterprises with those of failed companies. In J. O. Horrigan (Ed.), *Financial ratio analysis, an historical perspective*. New York, NY: Arno Press, A New York Company.

Flassbeck, H. (2012). *Don't blame the physical markets: Financialization is the root cause of oil and commodity price volatility* (Policy Brief No. 25). UNCTAD.

Flick, U. (2014). *An introduction to qualitative research* (Fifth edition). Los Angeles: Sage.

Fohlin, C. (1997). Universal banking networks in pre-war Germany: new evidence from company financial data. *Research in Economics*, *51*(3), 201–25.

Fontana, G., & Realfonzo, R. (Eds.). (2005). *The monetary theory of production: Tradition and perspectives*. Basingstoke, Hampshire; New York, NY: Palgrave Macmillan.

Foster, J. B. (2007). The financialization of capitalism. *Monthly Review*, *58*(11). Retrieved May 2, 2015, from https://monthlyreview.org/2007/04/01/the-financialization-of-capitalism/

Foulke, R. A. (1978). Three important balance sheet ratios. In J. O. Horrigan (Ed.), *Financial ratio analysis, an historical perspective*. New York, NY: Arno Press, A New York Company.

Fourie, L., Botha, I., & Mears, R. (2011). Credit extension in South Africa: A business cycle perspective for the period 1985 to 2009. *African Journal of Business Management*, *5*(34).

Friedland, R. (1987). Small business and the informal sector. *Optima Quarterly Review*, *35*(2), 100–9.

Froud, J., Haslam, C., Johal, S., & Williams, K. (2000). Shareholder value and Financialization: consultancy promises, management moves. *Economy and Society*, *29*(1), 80–110.

Fry, M. J. (1988). *Money, interest, and banking in economic development*. Baltimore: Johns Hopkins University Press.

Fung, M. V. (1992). Finance and the growth of corporations: A flow-of-funds approach. In W. Milberg (Ed.), *The megacorp & macrodynamics: Essays in memory of Alfred Eichner*. Armonk, NY: Sharpe.

Gallizo, J. L., Gargallo, P., & Salvador, M. (2008). Multivariate partial adjustment of financial ratios: A Bayesian hierarchical approach. *Journal of Applied Econometrics*, *23*(1), 43–64.

Gallizo, J. L., Jiménez, F., & Salvador, M. (2002). Adjusting financial ratios: A Bayesian analysis of the Spanish manufacturing sector. *Omega*, *30*(3), 185–195.

Gargallo, P., Salvador, M., & Gallizo, J. L. (2008). The speed of adjustment of financial ratios: A hierarchical Bayesian approach using mixtures. *Applied Stochastic Models in Business and Industry*, *24*(2), 129–58.

Garvy, G. (1975). Keynes and the economic activists of Pre-Hitler Germany. *Journal of Political Economy*, *83*(2), 391–405.

Gerring, J. (2007). *Case study research: Principles and practices*. New York, NY: Cambridge University Press.

Gerschenkron, A. (1976[1962]). *Economic backwardness in historical perspective: A book of essays*. Cambridge, MA: Belknap Press.

Gerso, J., & Barr, G. (1996). The structure of corporate control and ownership in a regulatory environment unbiased towards one-share-one-vote. *Corporate Governance, An International Review*, *4*(2), 78–97.

Gertler, M. (1988). Financial structure and aggregate economic activity: An overview. *Journal of Money, Credit, and Banking*, *20*(3), 559–96.

Goldie-Scot, D. (1996). *Banking and finance in South Africa*. London: FT Financial Publications.

Grabel, I. (2003). Averting crisis? Assessing measures to manage financial integration in emerging economies. *Cambridge Journal of Economics*, *27*(3), 317–36.

Grahl, J., & Teague, P. (2000). The Régulation School, the employment relation and financialization. *Economy and Society*, *29*(1), 160–78.

Green, C. J. (1992). Flow of funds. In P. Newman, M. Milgate, & J. Eatwell (Eds.), *The new Palgrave dictionary of money & finance*. London: New York, NY: Macmillan Press Ltd.; Stockton Press.

Green, C. J., Murinde, V., Suppakitjarak, J., & Moore, T. (2000). *Compiling and understanding the flow of funds in developing countries*. Manchester: Institute for Development Policy and Management, University of Manchester.

Greenwald, B., Stiglitz, J. E., & Weiss, A. (1984). *Informational imperfections on the capital market and macro-economic fluctuations* (Working Paper No. 1335). Cambridge, MA: National Bureau of Economic Research.

Gunnion, S. (2012, June 12). *SA companies' cash holdings near record*. Johannesburg: Moneyweb. Retrieved May 1, 2013, from http://www.moneyweb.co.za/archive/sa-companies-cash-holdings-near-record/

Gurley, J. G., & Shaw, E. S. (1960). *Money in a theory of finance*. Washington, DC: The Brookings Institute.

Hagart, R. B. (1952). The changing pattern of gold mining finance. *Optima Quarterly Review*, *2*(4), 1–4.

Hagemann, H. (2010). *L. Albert Hahn's Economic Theory of Bank Credit (No. 134)*. Vienna: WU Vienna.

Hahn, L. A. (1924). *Volkswirtschaftliche Theorie Des Bankkredits* (2nd edition). Tübingen: Verlag von J. C. B. Mohr.

Hahn, L. A. (1929). *Geld und Kredit*. Tübingen: Verlag von J. C. B Mohr (Paul Siebeck).

Halifax. (2014). *Halifax house price index*. Retrieved July 1, 2013, at http://www.globalinsight.co.za/

Hall, P. A., & Soskice, D. W. (Eds.). (2001). *Varieties of capitalism: the institutional foundations of comparative advantage*. Oxford [England]; New York, NY: Oxford University Press.

Harcourt, G. C. (1965). The accountant in a golden age. *Oxford Economic Papers*, *17*(1), 66–80.

Harford, J., Mansi, S. A., & Maxwell, W. F. (2008). Corporate governance and firm cash holdings in the US. *Journal of Financial Economics*, *87*(3), 535–55.

Harrod, R. F. (1939). An essay in dynamic theory. *The Economic Journal*, *49*(193), 14–33.

Harvey, D. (2013). *A companion to Marx's capital. Volume two*. London: Verso.

Hicks, J. R. (1943). *The social framework, an introduction to economics*. Oxford: Clarendon Press.

Hilferding, R. (1947[1910]). *Das Finanzkapital eine Studie über die jüngste Entwicklung des Kapitalism*. Berlin: Verlag JHW Dietz Nachf. GmbH.

Hirschman, A. O. (2004[1970]). *Exit, voice, and loyalty: responses to decline in firms,*

organizations, and states. Cambridge, Mass: Harvard University Press.

Horrigan, J. O. (1968). A short history of financial ratio analysis. *The Accounting Review*, *43*(2), 284–94.

Hunt, D. (1989). *Economic theories of development: An analysis of competing paradigms*. Hemel, Hempstead, Hertfordshire: Harvester Wheatsheaf.

Husson, M. (2008). *A systemic crisis, both global and long lasting* (Workers Liberty website). Retrieved March 17, 2013, from http://www.workersliberty.org/story/2008/07/21/marxists-capitalist-crisis-7-michel-husson-systemic-crisis-both-global-and-long-las

Iheduru, O. C. (2008). Why 'Anglo licks the ANC's boots': Globalization and state-capital relations in South Africa. *African Affairs*, *107*(428), 333–60.

IHS Global Insight Southern Africa (2014) *Absa House Price Index data, 2000-2012*, Centurion: HIS Global Insight Southern Africa.

INET BFA. (2013). *INET BFA Expert*. Johannesburg: INET BFA.

INET BFA. (2014). *Company milestones*. Retrieved February 1, 2014, from http://www.inetbfa.com/company/

INET BFA. (2015). *INET BFA Expert*. Johannesburg: INET BFA.

Innes, D. (1984). *Anglo American and the rise of modern South Africa*. London: Heinemann.

Isaacs, G. (2014). *The myth of "neutrality" and the rhetoric of "stability": Macroeconomic policy in democratic South Africa* (Working Paper No. 1). Johannesburg: PERSA: Political Economy of Restructuring in South Africa.

ISI Web of Science. (2014). Search "financial ratio".

Iskandar-Datta, M. E., & Jia, Y. (2011). Cross-country analysis of secular cash trends. *Journal of Banking & Finance*, *36*(3), 898–912.

Jakab, Z., & Kumhof, M. (2015). *Banks are not intermediaries of loanable funds—and why this matters* (Working Paper No. 529). Bank of England.

Jayadev, A., & Epstein, G. (2007). *The correlates of rentier returns in OECD countries* (Working Paper No. 123). Amherst: Department of Economics and Political Economy Research Institute, University of Massachusetts, Amherst.

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review*, *76*(2), 323–9.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–60.

Johannesburg Stock Exchange. (2012). JSE overview, who we are. Retrieved February 1, 2012, from https://www.jse.co.za/about/history-company-overview

Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, *1*(2), 112–33.

Jones, S. (1992a). Introduction: The growth of the financial sector 1950-88. In S. Jones (Ed.), *Financial enterprise in South Africa since 1950* (pp. 1–19). Basingstoke: Macmillan.

Jones, S. (1992b). Union Acceptances: The first merchant bank, 1955-73. In S. Jones (Ed.), *Financial enterprise in South Africa since 1950* (pp. 154–91). Basingstoke: Macmillan.

Jones, S. (2002). *The decline of the South African economy*. Cheltenham, UK; Northampton, MA, USA: Edward Elgar.

Jones, S. (2009). The role of banking development: South African development during the period of functional stability 1850s-1970s. *South African Journal of Economic History*, 24(1), 94-117.

Jovanovic, F. (2007). The role of the CAPM, MM and EMH in the rise of a scientific community. In G. Poitras (Ed.), *Twentieth-century contributions, volume II*. Cheltenham: Elgar.

Jubilee Platinum PLC. (2006). *Pre-listing statement*. London: Jubilee Platinum PLC.

Kalecki, M. (1937). The principle of increasing risk. *Economica*, *4*(16), 440–7.

Kalecki, M. (1984). The problem of effective demand with Tugan-Baranovski and Rosa Luxemburg. In J. B. Foster & H. Szlajfer (Eds.), *The faltering economy: The problem of accumulation under monopoly capitalism*. New York, NY: Monthly Review Press.

Kalecki, M. (1990[1932]). The influence of cartelization on the business cycle. In J. Osiatyński (Ed.), *Capitalism, business cycles and full employment* (pp. 56–9). Oxford [Oxfordshire]: New York: Clarendon Press; Oxford University Press.

Kalecki, M. (1990[1933]). Essays on the business cycle theory. In J. Osiatyński

(Ed.), *Capitalism, business cycles and full employment* (pp. 65–108). Oxford [Oxfordshire]: New York: Clarendon Press; Oxford University Press.

Kalecki, M. (1990[1939]). Essays in the theory of economic fluctuations. In J. Osiatyński (Ed.), *Capitalism, business cycles and full employment* (pp. 231–318). Oxford [Oxfordshire] : New York: Clarendon Press ; Oxford University Press.

Kalecki, M. (1991[1954]). Theory of economic dynamics. In J. Osiatyński (Ed.), *Capitalism, economic dynamics*. Oxford, England : New York: Clarendon Press ; Oxford University Press.

Karwowski, E. (2015). The finance–mining nexus in South Africa: How mining companies use the South African equity market to speculate. *Journal of Southern African Studies*, *41*(1), 9–28.

Karwowski, E., & Shabani, M. (2013). The impact of financial operations of non-financial firms on macroeconomic stability, growth and policy effectiveness: The case of Dow Jones-listed companies. In *17th Conference of the research network macroeconomics and macroeconomic policies (FMM)*. Berlin: Hans-Böckler-Stiftung.

Keenan, J. (1983). Trickle up: African income and unemployment. *South African Review*, *1*(1), 184–92.

Keynes, J. M. (1934, August 15). Letter to business associate F. C. Scott.

Keynes, J. M. (1936). *General theory of employment, interest and money*. Atlantic Publishers & Dist.

Keynes, J. M. (1937). The "ex-ante" theory of the rate of interest. *The Economic Journal*, *47*(188), 663-9.

Keynes, J. M. (2011[1930]). *A treatise on money: [two volumes complete in one]*. Mansfield Centre, CT: Martino Publishing.

Khurana, I. K., Martin, X., & Pereira, R. (2006). Financial development and the cash flow sensitivity of cash. *Journal of Financial and Quantitative Analysis*, *41*(04), 787-808.

Kim, C.-S., Mauer, D. C., & Sherman, A. E. (1998). The determinants of corporate liquidity: Theory and evidence. *The Journal of Financial and Quantitative Analysis*, *33*(3), 335-9.

Kindleberger, C. P. (1984). *A financial history of Western Europe*. London, Boston, Sydney: George Allen & Unwin.

Kiyotaki, N. (1998). Credit and business cycles. *The Japanese Economic Review*, *49*(1), 18–35.

Kiyotaki, N., & Moore, J. (1997). Credit cycles. *Journal of Political Economy*, *105*(2), 211-48.

Kiyotaki, N., & Moore, J. (2002). Balance-sheet contagion. *The American Economic Review*, *92*(2), 46–50.

Kliman, A., & Williams, S. D. (2012). *Why "financialization" hasn't depressed U.S. productive investment*. Presented at the Association for Heterodox Economics conference, Paris.

Knedlik, T. (2006). Signaling currency crises in South Africa (pp. 197–217). Presented at the *SARB conference 2006*, Pretoria: SARB (South African Reserve Bank).

Knight, F. H. (1921). *Risk, uncertainty, and profit* (Hart, Schaffner, and Marx Prize Essays, no. 31). Boston and New York, NY: Houghton Mifflin.

Koo, R. C. (2011). The world in balance sheet recession: Causes, cure, and politics. *Real-World Economic Review*, (58).

Kowalik, T. (2012). *Róża Luksemburg: Teoria akumulacji i imperializmu*. Warszawa: Instytut Wydawniczy Książka i Prasa.

Kregel, J. (1989). Savings, investment and finance in Kalecki's theory. In M. Sebastiani (Ed.), *Kalecki's relevance today*. Basingstoke: Macmillan.

Kregel, J. (1998). *Yes, "it" did happen again—A Minsky crisis happened in Asia* (Working Paper No. 234). Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.

Krippner, G. R. (2005). The financialization of the American economy. *Socio-Economic Review*, *3*(2), 173–208.

Krugman, P. R. (1999). Balance sheets, the transfer problem, and financial crises. Preliminary draft prepared for the festschrift volume for Robert Flood.

Krugman, P. R., & Wells, R. (2013). *Economics*. New York, NY: Worth Publishers.

Kubicek, R. V. (1979). *Economic imperialism in theory and practice: The case of South African gold mining finance, 1886-1914*. Durham: Duke University Press.

Laight, J. C. (1982). *The South African money and capital markets*. Johannesburg: Institute of Bankers in South Africa.

Lapavitsas, C. (2000). On Marx's analysis of money hoarding in the turnover of capital. *Review of Political Economy*, *12*(2), 219–35.

Lapavitsas, C. (2009). *Financialisation embroils developing countries* (Discussion Paper No. 14).

Lapavitsas, C. (2013). *Profiting without producing: How finance exploits us all*. London; New York, NY: Verso.

Lavoie, M. (1992). *Foundations of post-Keynesian economic analysis*. Aldershot, Hants, England; Brookfield, Vt: E. Elgar.

Lavoie, M. (2006). *An introduction to post-Keynesian economics*. Basingstoke, Hampshire: Palgrave Macmillan.

Lavoie, M. (2015). Kalecki and Post-Keynesian economics. In J. Toporowski & Ł. Mamica, *Michał Kalecki in the 21st Century* (pp. 51-67). Basingstoke, Hampshire; New York, NY: Palgrave Macmillan.

Lazonick, W., & O'Sullivan, M. (2000). Maximizing shareholder value: A new ideology for corporate governance. *Economy and Society*, *29*(1), 13–35.

Leake, P. D. (1938). *Balance sheet values: The limitations of industrial accounting*. London: Gee & Co. Publishers Limited.

Lee, B.-S., & Suh, J. (2011). Cash holdings and share repurchases: International evidence. *Journal of Corporate Finance*, *17*(5), 1306–29.

Lee, F. (2008). Heterodox economics. *The Long Term View*, *7*(1), 23–30.

Lehohla, P. (2002a). *The contribution of small and micro enterprises to the economy of the country: A survey of non-VAT-registered businesses in South Africa: Part 1 summary and tables.* Pretoria: Statistics South Africa (StatsSA).

Lehohla, P. (2002b). *The contribution of small and micro enterprises to the economy of the country: A survey of non-VAT-registered businesses in South Africa: Part 2 narrative report.* Pretoria: Statistics South Africa (StatsSA).

Lenin, V. I. (1975). *Imperialism, the highest stage of capitalism, a popular outline* (5th printing). Peking: Foreign Language Press.

Levine, R. (1997). Financial development and economic growth: Views and agenda. *Journal of Economic Literature*, *35*(2), 688–726.

Levine, R. (2005). Finance and growth: Theory and evidence. In P. Aghion & S. Durlauf (Eds.), *Handbook of economic growth* (Vol. 1, pp. 865–934). Elsevier.

Levine, R., & King, R. G. (1993). Finance, entrepreneurship, and growth: Theory and evidence. *Journal of Monetary Economics*, *32*, 513–42.

Lewis, W. A. (1954). Economic development with unlimited supplies of labour. *The Manchester School*, *22*(2), 139–91.

Limebeer, A. J. (1951). The group system of administration in the gold mining industry. *Optima Quarterly Review*, *1*(1), 26–30.

Lintner, J. (1967). Corporation finance: Risk and investment. In R. Ferber (Ed.), *Determinants of investment behavior* (pp. 215–68). National Bureau of Economic Research.

Lipton, M. (1980). The mining companies and their changing perspectives. *Optima Quarterly Review*, *29*(2/3), 97–118.

Locke Anderson, W. H. (1964). *Corporate finance and fixed investment*. Boston: Division of Research, Graduate School of Business Administration, Harvard University.

Lotz, W. (1890). *Die Technik des deutschen Emissionsgeschäfts: Anleihen, Konversionen und Grundlagen*. Leipzig: Duncker & Humblot.

Luckett, P. F. (1984). ARR vs. IRR: A review and an analysis. *Journal of Business Finance and Accounting*, *11*(2), 213–31.

Magdoff, H., & Sweezy, P. M. (1987). *Stagnation and the financial explosion*. New York, NY: Monthly Review Press.

Magubane, B. (1990). *The political economy of race and class in South Africa*. New York, NY: Monthly Review Press.

Mahdi, I. (forthcoming). *Informal finance in Sierra Leone: Why and how it fits into the financial system* (Economics Department Working Paper Series). London: SOAS.

Makhaya, T., & Roberts, S. (2014). *The changing strategies of large corporations in South Africa under democracy and the role of competition law* (Working Paper No. 2/2014). Johannesburg: Centre for Competition, Regulation and Economic Development, University of Johannesburg.

Malherbe, S., & Segal, N. (2001). *Corporate governance in South Africa* (2001 Annual Forum). Pretoria: Trade and Industrial Policy Strategies (TIPS).

Marais, H. (2011). *South Africa pushed to the limit: the political economy of change*. London; New York, NY: Zed.

Markowitz, H. (1952). Portfolio selection. *The Journal of Finance*, *7*(1), 77–91.

Marshall, A. (2013[1890]). *Principles of economics* (Ebook). Palgrave Macmillan.

Marx, K., & Engels, F. (1996[1894]). *Capital A Critique of Political Economy Volume*

III The Process of Capitalist Production as a Whole. New York, NY. Retrieved July 2, 2012, from https://www.marxists.org/archive/marx/works/download/pdf/Capital-Volume-III.pdf

Marx, K., & Engels, F. (2012). *Das Kapital - Capital. Vol. 2.* [Kentucky]: Aristeus Books.

Mason, S. (1976). *The flow of funds in Britain: An introduction to financial markets*. London: P. Elek.

Matsuyama, K. (2007). Credit traps and credit cycles. *The American Economic Review*, *97*(1), 503–16.

Mayer, C. (1987). The assessment: financial systems and corporate investment. *Oxford Review of Economic Policy*, *3*(4), 1-16.

Mayer, C. (1988). New issues in corporate finance. *European Economic Review*, *32*(5), 1163–89.

Mayer, C. (1990). Financial Systems, corporate finance, and economic development. In R. G. Hubbard (Ed.), *Asymmetric information, corporate finance, and investment*. Chicago: University of Chicago Press.

McKenzie, R. A. (2013). Determinants of financialisation in South Africa: A balance sheet approach. *Conference on international capital flows and financialisation of the South African economy*. Pretoria: Economic Development Department (EDD).

McKinnon, R. I. (1973). *Money and capital in economic development*. Washington, DC: Brookings Institution.

Mehrling, P. (2005). *Fischer Black and the revolutionary idea of finance*. Hoboken, N.J: John Wiley & Sons.

Meiselman, D. (1967). The flow of capital funds in the postwar economy by Raymond W. Goldsmith. *The American Economic Review*, *57*(3), 632–36.

Merton, R. C. (1987). In honour of Nobel laureate, Franco Modigliani. *Journal of Economic Perspectives*, *1*(2), 145–55.

Merwin, C. L. (1978). Portents of discontinuance. In J. O. Horrigan (Ed.), *Financial ratio analysis, an historical perspective*. New York, NY: Arno Press, A New York Company.

Messori, M., & Zazzaro, A. (2005). Single-period analysis: Financial markets, firms' failures and closure of the monetary circuit. In G. Fontana & R.

Realfonzo (Eds.), *The monetary theory of production tradition and perspectives*. Basingstoke, Hampshire; New York, NY: Palgrave Macmillan.

Michell, J. (2014). *A steindlian account of the distribution of corporate profits and leverage: A stock-flow consistent macroeconomic model with agent-based microfoundations* (Working Paper No. 1412). Post Keynesian Study Group.

Michell, J., & Toporowski, J. (2013). Critical observations on financialization and the financial process. *International Journal of Political Economy*, *42*(4), 67–82.

Millar, J. R. (1996). Institutionalist origins. In J. C. Dawson (Ed.), *Flow-of-funds analysis: A handbook for practitioners*. Armonk, NY: M.E. Sharpe.

Miller, M. H., & Orr, D. (1966). A model of the demand for money by firms. *Quarterly Journal of Economics*, *81*(3), 413–35.

Minsky, H. P. (1975). *John Maynard Keynes*. New York, NY: Columbia University Press.

Minsky, H. P. (1986). *Stabilizing an unstable economy* (Vol. 1). New York, NY: McGraw-Hill.

Minsky, H. P. (1989). *Money manager capitalism* (Hyman P. Minsky Archive Paper No. 13). Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.

Minsky, H. P. (1993). *Comment on Ben Bernanke, "Credit in the macroeconomy"* (Hyman P. Minsky Archive Paper No. 361). Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.

Mishkin, F. S. (1978). The household balance sheet and the Great Depression. *The Journal of Economic History*, *38*(4), 918–37.

Mishkin, F. S. (2001). *Financial policies and the prevention of financial crises in emerging market economies* (Working Paper No. 2683). Washington, DC: World Bank, Financial Sector Strategy and Policy Department.

Mishkin, F. S., & Eakins, S. G. (2012). *Financial markets and institutions*. Boston: Pearson.

Mitchell, W. C. (1927). *Business cycles: The problem and its setting*. National Bureau of Economic Research.

Mkele, N. (1960). The emergent African middle class. *Optima Quarterly Review*, *10*(4), 217–26.

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review*, *48*(3), 261–97.

Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital: A correction. *The American Economic Review*, *53*(3), 433–43.

Monyela, C. (2012). *Interview with the head of the flow of funds division, South African Reserve Bank, on South African flow-of-funds data*, Pretoria: SARB, September 2012.

Moore, B. J. (1979). The endogenous money stock. *Journal of Post Keynesian Economics*, *2*(1), 49–70.

Moore, B. J. (2003). Endogenous money. In J. E. King, *The Elgar companion to Post Keynesian economics*. Cheltenham, UK; Northampton, MA, USA: Edward Elgar.

Morley, M. F. (1984). *Ratio analysis*. Berkshire, England: Published for the Institute of Chartered Accountants of Scotland by Gee & Co.

Mott, T. (2012). Risk. In J. Toporowski & J. Michell, *Handbook of Critical Issues in Finance* (pp. 283–8). Cheltenham, UK ; Northampton, MA, USA: Edward Elgar.

Murphy, R. (2015). *George Osborne's planned budget surplus requires some heroic and wholly implausible assumptions* (Blog entry). Retrieved July 20, 2015, from http://www.taxresearch.org.uk/Blog/2015/07/09/george-osbornes-planned-budget-surplus-requires-some-heroic-and-wholly-implausible-assumptions/

Murray, M. J. (Ed.). (1982). *South African capitalism and black political opposition, essays on capitalist development in South Africa*. Cambridge, MA: Schenkman Publishing Company.

Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance*, *39*(3), 574–92.

Myers, S., & Majluf, N. (1984). *Corporate financing and investment decisions when firms have information that investors do not have* (Working Paper No. w1396). Cambridge, MA: National Bureau of Economic Research.

National Planning Commission (2012). *National Development Plan 2030, Our Future – Make It Work, Executive Summary*, Pretoria.

National Treasury. (2013). *National budget review*. Pretoria: National Treasury, Republic of South Africa.

Nattrass, N. (1991). Controversies about capitalism and apartheid in South Africa: An economic perspective. *Journal of Southern African Studies*, 17(4), 654-77.

Nedbank (1998-2014). *Annual report*, Johannesburg: Nedbank [17 issues in total].

Nelson, T. A. (1978). Capitalizing leases - the effect on financial ratios. In J. O. Horrigan (Ed.), *Financial ratio analysis, an historical perspective*. New York, NY: Arno Press, A New York Company.

Nesvetailova, A. (2008). Three facets of liquidity illusion: Financial innovation and the credit crunch. *German Policy Studies*, *4*(3), 83–132.

Nesvetailova, A. (2012). Liquidity. In J. Toporowski & J. Michell (Eds.), *Handbook of Critical Issues in Finance*. Cheltenham, UK; Northampton, MA, USA: Edward Elgar.

Neves, D., Aliber, M., Mogaladi, J., & du Toit, A. (2009). *Research report to programme to support pro-poor policy development in South Africa (PSPPD): Understanding informal self-employment: A qualitative-quantitative integrated study*. Bellville: Institute for Poverty, Land and Agrarian Studies (PLAAS).

Nissanke, M., & Aryeetey, E. (1998). *Financial integration and development: Liberalization and reform in Sub-Saharan Africa*. Routledge.

Nissanke, M., & Aryeetey, E. (2006). *Institutional analysis of financial market fragmentation in Sub-Saharan Africa; A risk-cost configuration approach* (Working Paper No. 2006/87). World Institute for Development Economics Research.

Ohanian, L. E. (2010). The economic crisis from a neoclassical perspective. *Journal of Economic Perspectives*, *24*(4), 45–66.

Ohlson, J. A. (1980). Financial ratios and the probabilistic prediction of bankruptcy. *Journal of Accounting Research*, *18*(1), 109–31.

ONS (2014) *Consumer price inflation, 2001-2012*, London: Office of National Statistics (ONS).

Opler, T., Pinkowitz, L., Stulz, R., & Williamson, R. (1997). *The determinants and implications of corporate cash holdings* (No. w6234). Cambridge, MA: National Bureau of Economic Research.

Organisation for Economic Cooperation and Development (OECD). (2012). *OECD Factbook 2011-2012: Economic, environmental and social statistics.*

Paris: Organisation for Economic Cooperation and Development (OECD).

Orhangazi, O. (2008). Financialisation and capital accumulation in the non-financial corporate sector: A theoretical and empirical investigation on the US economy: 1973-2003. *Cambridge Journal of Economics*, *32*(6), 863–86.

Ozkan, A., & Ozkan, N. (2004). Corporate cash holdings: An empirical investigation of UK companies. *Journal of Banking & Finance*, *28*(9), 2103–2134.

Padayachee, V. (1991). The politics of South Africa's international financial relations, 1970-1990. In S. Gelb (Ed.), *South Africa's economic crisis* (pp. 88-109). Cape Town: New Jersey: D. Philip; Zed Books.

Palan, R. (2012). Tax havens. In J. Toporowski & J. Michell (Eds.), *Handbook of critical issues in finance* (pp. 296–300). Cheltenham: Edward Elgar.

Panitch, L., & Gindin, S. (2004). Global capitalism and American empire. *Socialist Register*, *40*, 1–42.

Parguez, A., & Seccareccia, M. (1999). The credit theory of money: The monetary circuit approach. In J. Smithin (Ed.), *What is money?* (pp. 101-23). London: Routledge.

Patrick, H. T. (1984). Demand-following or supply-leading finance. In G. M. Meier (Ed.), *Leading issues in economic development* (4th ed, pp. 251–3). New York: Oxford University Press.

Peavler, R. (2014, June 10). *What is the Cash Ratio, Cash Ratio Definition, and Cash Ratio Formula?* (Blog entry) Retrieved August 24, 2014, from http://bizfinance.about.com/od/financialratios/f/what-is-the-cash-ratio-cash-ratio-definition-cash-ratio-formula.htm

Pendlebury, M. W., & Groves, R. E. V. (2004). *Company accounts: Analysis, interpretation and understanding*. London: Thomson Learning.

Penrose, E. T. (2009). *The theory of the growth of the firm* (4th ed., Rev. ed). Oxford; New York, NY: Oxford University Press.

Penrose, J. (2015). Firm heterogeneity, finance and development: A Kaleckian perspective. In J. Toporowski & Ł. Mamica (Eds.), *Michał Kalecki in the 21st century* (pp. 239–51). Houndmills, Basingstoke, Hampshire: Palgrave Macmillan.

Phillips, K. (1994). *Arrogant capital: Washington, Wall Street, and the frustration of American politics* (1st ed). Boston: Little, Brown and Co.

Pogue, T. E. (2000). *An overview of producer services in the mining industry in South Africa* (Working Paper No. 00/35). Cape Town: Development Policy Research Unit University of Cape Town.

Poitras, G. (Ed.). (2006). *Pioneers of financial economics, volume I*. Cheltenham, UK; Northampton, MA: Edward Elgar.

Poitras, G. (Ed.). (2007). *Twentieth-century contributions, volume II*. Cheltenham, UK; Northampton, MA: Edward Elgar.

Pollack, W. (1937). *L. Albert Hahns volkswirtschaftliche Theorie des Bankkredits. Inaugural-Dissertation*. Würzburg: Triltsch.

Pollin, R. (2006). *Remembering Harry Magdoff* (Blog entry for Counterpunch). Retrieved August 10, 2015, from http://www.counterpunch.org/2006/01/06/remembering-harry-magdoff/

Powelson, J. P. (1960). *National income and flow of funds analysis*. New York, NY, Toronto, London: McGraw-Hill Book Company Inc.

Prinsloo, J. W. (2002). *Household debt, wealth and saving* (pp. 63-78). Pretoria: SARB.

PWN. (2015). Breit Marek. In *Encyklopedia PWN*. Warszawa: Wydawnictwo Naukowe PWN.

Rajan, R. G., & Zingales, L. (2001). Financial systems, industrial structure, and growth. *Oxford Review of Economic Policy*, *17*(4), 467–82.

Ram, R. (1999). Financial development and economic growth: Additional evidence. *Journal of Development Studies*, *35*(4), 164–74.

Rashid, H. (2013). Does financial market liberalization promote financial development?: Evidence from Sub-Saharan Africa. In J. E. Stiglitz, J. Esteban, J. Lin Yifu, & E. Patel, *The industrial policy revolution II: Africa in the twenty-first century*. Palgrave Macmilliam.

Reisch, R. (1929). Rückwirkungen der Börsenspekulation auf den Kreditmarkt. *Zeitschrift Für Nationalökonomie*, *1*(2), 205–21.

Reisch, R. (1930). Die 'Deposit"-Legende in der Banktheorie. *Zeitschrift Für Nationalökonomie*, *1*(4), 489–533.

Renaud, J.-F. (1998). The problem of the monetary realization of profits in a Post Keynesian sequential financing model: The two solutions of the Kaleckian option. *mimeo*, University of Lyon.

Roberts, S. (2004). The role for competition policy in economic development: The South African experience. *Development Southern Africa*, *21*(1), 227–43.

Robinson, J. (1954). The generalisation of the general theory. In *The rate of interest and other essays* (pp. 67-96). London: Macmillan & Co Ltd.

Robinson, J. (Ed.). (1973). *After Keynes*. Oxford: Blackwell.

Rodrigues Teles Sampaio, N. J. (2012). *Financialisation in South Africa: Examining the financial conduct of non-financial enterprises, banks and households* (PhD Thesis). SOAS, University of London, London.

Roe, A. R. (1973). *The case for flow of funds and national balance sheet accounts* (Warwick Economic Research Papers No. 29). Warwick University.

Rogerson, C. M. (1987). The state and the informal sector: A case of separate development. *South African Review*, *4*(1), 412–22.

Rogerson, C. M. (1989). The deregulation of hawking: Rhetoric and reality. *South African Review*, *5*(1), 136–48.

Roomaney, M. (2014, March 12). *Urgent queries* (Email exchange).

Rosenthal, E. (1968). *On 'change through the years, a history of share dealing in South Africa*. Cape Town, Johannesburg: Flesh Financial Publications.

Rossouw, G. J., van der Watt, A., & Malan, D. P. (2002). Corporate governance in South Africa. *Journal of Business Ethics*, *37*, 289–302.

Rybczynski, T. (1983). *The industrial finance systems: Europe, U.S. and Japan* (Working Paper Series No. 113). Research Institute for Industrial Economics.

Sakoui, A. (2014, January 21). Hugh cash piles puts recovery in hands of the few. *Financial Times*. London.

Salmi, T., & Martikainen, T. (1994). A review of the theoretical and empirical basis of financial ratio analysis. *The Finnish Journal of Business Economics*, *43*(4), 426–48.

Samuelson, P. A., & Nordhaus, W. D. (1999). *GDP: One of the great inventions of the 20th century*. BEA (Bureau of Economic Analysis, U.S. Department of Commerce).

Santomero, A. M. (1984). Modeling the banking firm: A survey. *Journal of Money, Credit and Banking*, *16*(4), 576-602.

SARB (South African Reserve Bank). (1994). South Africa's national financial account 1970-1992. *Supplement to the South African Reserve Bank Quarterly bulletin December 1994*. Pretoria: SARB.

SARB (South African Reserve Bank). (1995a-2015a). *Quarterly bulletin, June*. Pretoria: SARB [20 issues in total].

SARB (South African Reserve Bank). (1996b-2014b). *Bank supervision department annual report*. Pretoria: SARB.

SARB (South African Reserve Bank). (2011c). *Institutional sector classification guide for South Africa*. Pretoria: SARB.

SARB (South African Reserve Bank). (2015c). *Economic and financial data for South Africa*. Pretoria: SARB. Retrieved April 1, 2015, from http://wwwrs.resbank.co.za/webindicators/EconFinDataForSA.aspx

SARB (South African Reserve Bank). (2015d). *Exchange control manuel*. Pretoria: SARB. Retrieved December 1, 2013, from https://www.resbank.co.za/RegulationAndSupervision/FinancialSurveillanceAndExchangeControl/EXCMan/Pages/default.aspx

SARB (South African Reserve Bank). (2015e). *Ownership - South African Reserve Bank*. Pretoria: SARB. Retrieved July 5, 2015, from https://www.resbank.co.za/AboutUs/History/Background/Pages/OwnershipOfTheSouthAfricanBank.aspx

Sawyer, M. (2001). Kalecki on money and finance. *The European Journal of the History of Economic Thought*, *8*(4), 487–508.

Sawyer, M. (2013). What is financialization? *International Journal of Political Economy*, *42*(4), 5–18.

Say, J.-B. (1834). *A treatise on political economy; or, the production, distribution, and consumption of wealth*. Philadelphia: Grigg & Elliot.

Schaberg, M. (1999). *Globalization and the erosion of national financial systems: is declining autonomy inevitable?* Cheltenham, UK; Northampton, MA, USA: E. Elgar.

Schumpeter, J. A. (1983[1934]). *The theory of economic development: an inquiry into profits, capital, credit, interest, and the business cycle*. New Brunswick, NJ: Transaction Books.

Schumpeter, J. A. (1994[1942]). *Capitalism, socialism and democracy*. London: Routledge.

Schumpeter, J. A., & Schumpeter, E. B. (1986). *History of economic analysis*. New York, NY: Oxford University Press.

Seccareccia, M. (2013). Understanding Financialization: History, theory, and institutional analysis: Editor's Introduction. *International Journal of Political*

Sephaku Holdings Ltd. (2009a). *Annual financial statements*. Centurion: Sephaku Holdings Ltd.

Sephaku Holdings Ltd. (2009b). *Pre-listing statement*. Centurion: Sephaku Holdings Ltd.

Sephaku Holdings Ltd. (2013). *Exploration, development, income, growth, Sephaku integrated report 2013*. Centurion: Sephaku Holdings Ltd.

Serfati, C. (1996). Le rôle actif des groupes à dominante industrielle dans la financiarisation de l'économies. In F. Chesnais (Ed.), *La mondialisation financière: Genèse, coût et enjeux* (pp. 143-84). Paris: Syros.

Serfati, C. (2008). Financial dimensions of transnational corporations, global value chain and technological innovation. *Journal of Innovation Economics*, *2*(2), 35-61.

Shah, A. (2011). The corporate cash holdings: Determinants and implications. *African Journal of Business Management*, *5*(34), 12939-50.

Shaik, A. (2012). Three balances and twin-deficits: Godley versus Ruggles and Ruggles. In D. B. Papadimitriou & G. Zezza (Eds.), *Contributions in stock-flow modeling: Essays in honour of Wynne Godley*. Houndmills, Basingstoke, Hampshire; New York, NY: Palgrave Macmillan.

ShareData. (2013). *ShareData online, shares*. Retrieved March 5, 2013, from http://www.sharedata.co.za/v2/scripts/Shares.aspx

Shaw, E. S. (1973). *Financial deepening in economic development*. London; New York, NY: Oxford University Press.

Shen, C.-H., & Lee, C.-C. (2006). Same financial development yet different economic growth--Why? *Journal of Money, Credit, and Banking*, *38*(7), 1907–44.

Skinner, I., & Osborn, E. (1992). Changes in banking in South Africa in the 1980s. In S. Jones (Ed.), *Financial enterprise in South Africa since 1950*. Basingstoke: Macmillan.

Smith, R. F., & Winakor, A. H. (1935). *Testing ratios of unsuccessful companies, changes in the structure of unsuccessful industrial corporations* (Working Paper No. 51). University of Illinois, Urbana: Bureau of Business Research.

Snowdon, B., & Vane, H. R. (2005). *Modern macroeconomics: Its origins, development and current state*. Cheltenham, UK; Northhampton, MA: E. Elgar.

Solow, R. M. (1956). A contribution to the theory of economic growth. *Quarterly Journal of Economics*, *70*(1), 65–94.

Solow, R. M. (1988). Growth theory and after. *The American Economic Review*, *78*(3), 307–17.

South African National Treasury. (2011). *A safer financial sector to serve South Africa better*. Pretoria: South African National Treasury.

South African National Treasury. (2014). *Treating customers fairly in the financial sector, a draft market conduct policy framework for South Africa*. Pretoria: South African National Treasury.

South African President's Office. (1996). *National small business act*. Pretoria: South African President's Office.

Southall, R. (2004). Political change and the black middle class in democratic South Africa. *Canadian Journal of African Studies*, *38*(3), 521–42.

S&P/Case-Schiller. (2014). *S&P house price index*. Retrieved July 1, 2013, at http://www.standardandpoors.com/indices/sp-case-shiller-home-price-indices/en/us/?indexId=spusa-cashpidff--p-us----

Sparks, A. (1990). *The mind of South Africa: The story of the rise and fall of apartheid*. London: Heinemann.

Standard Bank (2002-2014). *Annual report*, Johannesburg: Standard Bank [13 issues in total].

Steffy, W., Zearley, T., & Strunk, J. (1974). *Financial ratio analysis, an effective management tool*. Ann Arbor, Michigan: Industrial Development Division, Institute of Science and Technology, University of Michigan.

Stein, J. L. (1970). Monetary growth theory in perspective. *The American Economic Review*, *60*(1), 85–106.

Steindl, J. (1945a). Capitalist enterprise and risk. *Oxford Economic Papers*, *7*, 21–45.

Steindl, J. (1945b). *Small and big business, economic problems of the size of firms*. Oxford: Basil Blackwell.

Steindl, J. (1976[1952]). *Maturity and stagnation in American capitalism*. New York, NY: Monthly Review Press.

Steindl, J. (1989). The role of household saving in the modern economy. *Banca Nazionale Del Lavoro Quarterly Review*, *140*, 69–88.

Stiglitz, J. E. (1998). *The role of the financial system in development. Presentation at the fourth annual bank conference on development in Latin America and the Caribbean (LAC ABCDE), 29 June 1998*. San Salvador.

Stiglitz, J. E., & Ocampo, J. A. (Eds.). (2008). *Capital market liberalization and development*. Oxford; New York, NY: Oxford University Press.

Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *The American Economic Review*, *71*(3), 393–410.

Stockhammer, E. (2004). Financialisation and the slowdown of accumulation. *Cambridge Journal of Economics*, *28*(5), 719–41.

Stockhammer, E. (2013). Financialization, income disbtribution and the crisis. In S. Fadda & P. Tridico (Eds.), *Financial crisis, labour markets, and institutions* (pp. 98-120). New York, NY: Routledge.

Studart, R. (1995). The efficiency of financial systems, liberalization, and economic development. *Journal of Post Keynesian Economics*, *18*(2), 269–92.

Tamari, M. (1978). *Financial ratios: analysis and prediction*. London: P. Elek.

Taylor, L. (1983). *Structuralist macroeconomics: Applicable models for the Third World*. New York, NY: Basic Books.

Taylor, S. P. (1996). From moneyflows accounts to flow-of-funds accounts. In J. C. Dawson, *Flow-of-funds analysis: A handbook for practitioners* (chapter 6). Armonk, NY: M.E. Sharpe.

Thabex Exploration Limited. (1998). *Annual report 1998* (Annual report). Pretoria: Thabex Exploration Limited.

The Commonwealth Secretariat. (1989). *Changing Southern Africa, South Africa: The sanctions report*. London: Penguin Books.

The Department of Trade and Industry. (1995). *White paper on national strategy for the development and promotion of small business in South Africa*. Cape Town: Parliament of the Republic of South Africa.

Tobin, J. (1965). Money and economic growth. *Econometrica: Journal of the*

Econometric Society, *33*(4), 671–84.

Toporowski, J. (1993). *The economics of financial markets and the 1987 crash*. Aldershot, England; Brookfield, Vt., USA: E. Elgar.

Toporowski, J. (2000). *The end of finance: the theory of capital market inflation, financial derivatives, and pension fund capitalism*. London; New York, NY: Routledge.

Toporowski, J. (2003). Kaleckian economics. In J. E. King (Ed.), *The Elgar companion to Post Keynesian economics*. Cheltenham, UK; Northhampton, MA, USA: E. Elgar Pub.

Toporowski, J. (2005a). Methodology and industrial maturity in Steindl's capitalism. In T. Mott & N. Shapiro (Eds.), *Rethinking capitalist development: Essays on the economics of Josef Steindl* (pp. 107–26). London ; New York: Routledge.

Toporowski, J. (2005b). *Theories of financial disturbance: an examination of critical theories of finance from Adam Smith to the present day*. Cheltenham, UK; Northhampton, MA: Edward Elgar.

Toporowski, J. (2008a). *Excess capital and liquidity management* (Working Paper No. 549). Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.

Toporowski, J. (2008b). Minsky's "induced investment and business cycles". *Cambridge Journal of Economics*, *32*(5), 725–37.

Toporowski, J. (2010). *Why the world economy needs a financial crash and other critical essays on finance and financial economics*. London; New York, NY: Anthem Press.

Toporowski, J. (2012a). Overcapitalization. In J. Toporowski & J. Michell (Eds.), *Handbook of critical issues in finance*. Cheltenham: Edward Elgar.

Toporowski, J. (2012b). *The monetary theory of Kalecki and Minsky* (Department of Economics Working Paper No. 172). London: SOAS.

Toporowski, J. (2013). *Michał Kalecki: An intellectual biography. Volume I, Rendezvous in Cambridge, 1899-1939*. New York: Palgrave Macmillan.

Toporowski, J. (2015). The Kalecki-Steindl theory of financial fragility. In J. Toporowski & Ł. Mamica (Eds.), *Michał Kalecki in the 21st century* (pp. 252-64). Houndmills, Basingstoke, Hampshire: Palgrave Macmillan.

Trichet, J.-C. (2010). *What role for finance, university lecture by Jean-Claude Trichet, president of the ECB, at the Universidade Nova de Lisbon, 6 May 2010*. Lisbon.

Tserng, H. P., Liao, H.-H., Tsai, L. K., & Chen, P.-C. (2011). Predicting construction contractor default with option-based credit model: Models' performance and comparison with financial ratio models. *Journal of Construction Engineering and Management*, *137*(6), 412–20.

Tugan-Baranowsky, M. (1901). *Studien zur Theorie und Geschichte der Handelskrisen in England*. Jena: Gustav Fischer.

Turrell, R. V. (1987). *Capital and labour on the Kimberley diamond fields, 1871-1890*. Cambridge [Cambridgeshire]; New York, NY: Cambridge University Press.

UNCTAD Trade and Development Board. (2007). *Review of practical implementation issues of International Financial Reporting Standards, case study of South Africa*. Geneva: United Nations Conference on Trade and Development (UNCTAD) secretariat.

Uys, D. J. (1984). The system of national financial accounts. In H. B. Falkena, L. J. Fourie, & W. J. Kok (Eds.), *The mechanics of the South African financial system: Financial institutions, instruments, and markets* (pp. 6-35). Johannesburg: Macmillan South Africa.

van Greuning, H. (2006). *International financial reporting standards: a practical guide* (4. ed). Washington, DC: World Bank.

van Wijnbergen, S. (1983). Interest rate management in LDCs. *Journal of Monetary Economics*, 12(3), 433–52.

Varian, H. (1993). A portfolio of Nobel laureates: Markowitz, Miller and Sharpe. *Journal of Economic Perspectives*, *7*(1), 159–69.

Veblen, T. (1904). *The theory of business enterprise*. Blackmask Online.

Veblen, T. (1921). *The engineers and the price system*. New York, NY: B. W. Huebsch.

Vercelli, A. (2013). Financialization in a long-run perspective: An evolutionary approach. *International Journal of Political Economy*, *42*(4), 19–46.

Verhoef, G. (1992a). Afrikaner nationalism in South African banking: The case of Volkskas and Trust Bank. In S. Jones (Ed.), *Financial enterprise in South Africa since 1950* (pp. 115–53). Basingstoke: Macmillan.

Verhoef, G. (1992b). Nedbank, 1945-89: The continental approach to banking in South Africa. In S. Jones (Ed.), *Financial enterprise in South Africa since 1950* (pp. 80–114). Basingstoke: Macmillan.

Verhoef, G. (2010). *The globalisation of conglomerates: Expaining the exprience from South Africa, 1990-2009* (Workshop Presentation). Johannesburg: University of Johannesburg.

Volkov, A., & van den Poel, D. (2012). Extracting information from sequences of financial ratios with Markov for discrimination: An application to bankruptcy prediction (pp. 340–43). *Conference proceedings from the 12th international conference on data mining workshops (ICDMW)*, Brussels: IEEE.

Volkskas Limited. (1984). Commercial banks. In H. B. Falkena, L. J. Fourie, & W. J. Kok (Eds.), *The mechanics of the South African financial system: Financial institutions, instruments, and markets* (pp. 62-9). Johannesburg: Macmillan South Africa.

von Hayek, F. A. (1929). *Geldtheorie und Konjunkturtheorie*. Wien, Leipzig: Hölder-Pichler-Tempsky A. G.

von Peter, G. (2005). *Debt-deflation: Concepts and a stylised model* (Working Paper No. 176). Basel: Bank for International Settlement.

von Pischke, J. D. (1991). *Finance at the frontier: Debt capacity and the role of credit in the private economy*. Washington, DC: World Bank.

von Pischke, J. D. (1997). *Poverty, human development and financial services* (Occasional Paper No. 25). New York, NY: United Nations Development Program (UNDP).

Wai, U. T. (1984). Organized and unorganized money markets. In G. M. Meier (Ed.), *Leading issues in economic development* (4th ed). New York, NY: Oxford University Press.

Wall, A. (1919). Study of credit biometrics. *Federal Reserve Bulletin*, *5*(3), 229–43.

Wall, A., & Duning, R. W. (1928). *Ratio analysis of financial statements, an explanation of a method of analysing financial statements by the use of ratios*. New York, NY, and London: Harper & Brothers Publishers.

Waters, R. (2014, January 21). Mounting cash pile an embarrassment of riches of tech companies. *Financial Times*. London.

Weber, M. (2012). *The theory of social and economic organization*. (A. M. Henderson & T. Parsons, Eds.). Mansfield Centre, CT: Martino Publishing.

Weber, M., & Borchardt, K. (1999a). *Gesamtausgabe. Abt. 1 Bd. 5 Halbbd. 1: Schriften und Reden Börsenwesen: Schriften und Reden 1893 - 1898*. Tübingen: Mohr.

Weber, M., & Borchardt, K. (1999b). *Gesamtausgabe. Abt. 1 Bd. 5 Halbbd. 2: Schriften und Reden Börsenwesen: Schriften und Reden 1893 - 1898*. Tübingen: Mohr.

Weber, M., & Kaelber, L. (2003). *The history of commercial partnerships in the Middle Ages / Max Weber; translated and introduced by Lutz Kaelber*. Lanham, Md: Rowman & Littlefield.

Whalen, C. J. (2012). Money manager capitalism. In J. Toporowski & J. Michell (Eds.), *Handbook of critical issues in finance*. Cheltenham, UK; Northhampton, MA: Edward Elgar.

Wicksell, K. (1907). The influence of the rate of interest on prices. *The Economic Journal*, *17*(66), 213–20.

Wicksell, K. (2006[1898]). *Geldzins und Güterpreise: eine Studie über die den Tauschwert des Geldes bestimmenden Ursachen* (1. Aufl). München: FinanzBuch-Verlag.

Withers, H. (1912). *The meaning of money*. Boston: E. P. Dutton & Company.

Wits Gold. (2007). *Annual report 2007, a long term option on gold*. Johannesburg: Witswatersrand Consolidated Gold Resources.

Wolf, H. C. (2011). *Relationship-based and arms-length financial systems: A European perspective* (Working Paper No. 5833). Washington, DC: World Bank.

Wöltje, J. (2012). *Finanzkennzahlen und Unternehmensbewertung* (1. Aufl). Freiburg: Haufe-Lexware.

Woodford, M. (2003). *Interest and prices: Foundations of a theory of monetary policy*. Princeton: Princeton University Press.

World Bank (2014) South African GDP deflator. *World Development Indicators*. Washington, DC: World Bank.

World Bank (2007). *South Africa, enterprise survey*. Washington, DC: World Bank.

Wray, L. R. (2009). The rise and fall of money manager capitalism: A Minskian approach. *Cambridge Journal of Economics*, *33*(4), 807–28.

Wray, L. R. (2012). Godley got it right. In D. B. Papadimitriou & G. Zezza (Eds.), *Contributions in stock-flow modeling: Essays in honour of Wynne Godley* (36-62). Houndmills, Basingstoke, Hampshire; New York, NY: Palgrave Macmillan.

Zysman, J. (1983). *Governments, markets, and growth: Financial systems and the politics of industrial change*. Ithaca, NY: Cornell University Press.

Appendices

Table A.1. JSE industrial sector classifications and sub-sectors

Highest level of aggregation	2nd	3rd	4th
Basic Materials			
	Basic Resources		
		Forestry & Paper	
			Forestry
			Paper
		Industrial Metals	
			Aluminium
			Nonferrous Metals
			Steel
		Mining	
			Coal
			Diamonds & Gemstones
			General Mining
			Gold Mining
			Platinum & Precious Metals
	Chemicals		
		Commodity Chemicals	
		Specialty Chemicals	
Consumer Goods			
	Automobiles & Parts		
		Auto Parts	
		Automobiles	
		Tires	
	Food & Beverages		
		Beverages	
			Brewers
			Distillers & Vintners
			Soft Drinks
		Food Producers	
			Farming & Fishing
			Food Products
	Personal & Household Goods		
		Household Goods	
			Durable Household Products
			Furnishings
			Home Construction
			Nondurable Household Products
		Leisure Goods	
			Consumer Electronics
			Recreational Products
			Toys
		Personal Goods	
			Clothing & Accessories
			Footware
			Personal Products
		Tobacco	

Consumer Services			
	Media		
		Broadcasting & Entertainment	
		Media Agencies	
		Publishing	
	Retail		
		Food & Drug Retailers	
			Drug Retailers
			Food Retailers & Wholesalers
		General Retailers	
			Apparel Retailers
			Broadline Retailers
			Home Improvement Retailers
			Specialised Consumer Services
			Specialty Retailers
	Travel & Leisure		
		Airlines	
		Gambling	
		Hotels	
		Recreational Services	
		Restaurants & Bars	
		Travel & Tourism	
Financials			
	Banks		
	Financial Services		
		General Financial	
			Asset Managers
			Consumer Finance
			Investment Services
			Mortgage Finance
			Speciality Finance
		Real Estate	
			Real Estate Holdings & Development
			Real Estate Investment Trusts
	Insurance		
		Life Insurance	
		Nonlife Insurance	
			Full Line Insurance
			Insurance Brokers
			Property & Casualty Insurance
			Reinsurance
	Investment Instruments	Equity Investment Instruments	
		Nonequity Investment Instruments	
	Real Estate		
		Real Estate Investment & Services	Real Estate Holdings & Development
			Real Estate Services
		Real Estate Investment Trusts	Diversified REITs
			Hotel & Lodging REITs
			Industrial & Office REITs
			Mortgage REITs
			Residential REITs
			Retail REITs
			Sepcialty REITs

Health Care			
	Health Care Equipment & Services		
		Health Care Providers	
		Medical Equipment	
		Medical Supplies	
	Pharmaceuticals & Biotechnology		
		Biotechnology	
		Pharmaceuticals	
Industrials			
	Construction & Materials		
		Building Materials & Fixtures	
		Heavy Construction	
	Industrial Goods & Services		
		Aerospace & Defense	
		Electronic & Electrical Equipment	
			Electronical Components & Equipment
			Electronic Equipment
		General Industrials	
			Containers & Packaging
			Diversified Industrials
		Industrial Engineering	
			Commercial Vehicles & Trucks
			Industrial Machinery
		Industrial Transportation	
			Delivery Services
			Marine Transportation
			Railroads
			Transportation Services
			Trucking
		Support Services	
			Business Support Services
			Business Training & Employment Agencies
			Financial Administration
			Industrial Suppliers
			Waste & Disposal Services
Oil & Gas			
	Alternative Energy		
		Alternative Fuels	
		Renewable Energy Equipment	
	Oil & Gas Producers		
		Exploration & Production	
		Integrated Oil & Gas	
	Oil Equipment & Services		
		Oil Equipment & Services	
		Pipelines	

Telecommunications		
	Fixed Line Telecommunications	
	Mobile Telecommunications	
Utilities		
	Electricity	
		Alternative Electricty
		Electricity
	Gas, Water & Multiutilities	
		Gas Distribution
		Multiutilities
		Water

Note: Marked in grey are those sectors that are not available in aggregate.

Table A.2. National financial account 2014, (SARB, 2015, p. S-46)

National financial account
Flow of funds for the year 2014[1]

R millions

Sectors / Transaction items	Foreign sector		Financial intermediaries									
			Monetary authority		Other monetary institutions[2]		Public Investment Corporation[3]		Insurers and retirement funds		Other financial institutions	
	S	U	S	U	S	U	S	U	S	U	S	U
1. Net saving[4]	206 644		155		49 980				31 258		22 565	
2. Consumption of fixed capital[4]			56		11 888				1 591		2 708	
3. Capital transfers	180	**416**										
4. Gross capital formation[4]				**193**		**13 930**				**2 749**		**380**
5. Net lending (+)/net borrowing (-) (S)	206 408		18		47 938				30 100		24 893	
6. Net financial investment (+) or (-) (U)		**206 408**		**18**		**47 938**				**30 100**		**24 893**
7. Net incurrence of financial liabilities (Total S 9 – 32)	-48 340		64 002		255 807		122 628		259 184		151 967	
8. Net acquisition of financial assets (Total U 9 – 32)		**158 068**		**64 020**		**303 745**		**122 628**		**289 284**		**176 860**
9. Gold and other foreign reserves	16 602			**16 602**								
10. Cash and demand monetary deposits[5]		**15 275**	38 386	**-2 476**	75 996	**8 327**		**-29 900**		**1 934**		**8 388**
11. Short/Medium-term monetary deposits[5]		**22 640**	222	**-2 230**	121 235			**-14 260**		**5 323**		**27 807**
12. Long-term monetary deposits[5]		**10 446**	1 576	**-201**	15 037			**-6 653**		**2 286**		**-5 341**
13. Deposits with other financial institutions	-4 168	**475**				**-440**		**1 759**		**3 903**	41 990	**-4 168**
14. Deposits with other institutions	30 004					**32 460**	122 628	**18 491**	18 491	**81 213**		**33 321**
15. Treasury bills	-4 380			**127**		**25 688**		**-114**		**-567**		**-1 070**
16. Other bills	91 227			**85 814**	-1 663	**2 397**		**7 684**		**-608**	-2 322	**-4 387**
17. Bank loans and advances	6 380		-3 518	**22 336**	21 806	**147 694**			3		18 074	
18. Trade credit and short-term loans	-30 878	**115 384**	1 287	**-8 154**	120 272	**-41 630**			633	**2 777**	18 709	**28 505**
19. Short-term government bonds				**-107**		**10 678**		**-1 861**		**-5 529**		**-9 309**
20. Long-term government bonds	565	**43 563**		**632**		**-4 715**		**58 593**		**50 026**		**15 335**
21. Non-marketable government bonds[6]		**-4 523**		**-1 529**								
22. Securities of local governments						**934**		**146**		**2 796**		**-765**
23. Securities of public enterprises	792	**-707**	2 493			**17 864**		**17 203**		**-1 208**	-5 990	**3 599**
24. Other loan stock and preference shares	-3 333	**-7 254**			7 388	**41 844**		**8 617**	45	**34 015**	-178	**492**
25. Ordinary shares	85 438	**40 591**			4 324	**6 638**		**42 483**	1 089	**153 471**		**112 373**
26. Foreign branch/head office balances												
27. Long-term loans	9 212	**81 150**	24 616	**-5**	8 533				1 580	**8 827**	7 495	**9 478**
28. Mortgage loans	4 657					**83 824**			97	**-371**	4 267	**1 712**
29. Interest in retirement and life funds[7]		**1 598**				**1 587**			113 499			
30. Amounts receivable/payable	-194 279	**-123 077**	-1 687	**-9 009**	-124 787	**-14 753**			78 523	**-45 046**	47 046	**-27 414**
31. Other assets/liabilities	-56 179	**-37 493**	627	**-37 780**	8 001	**-14 737**		**20 440**	44 667	**-3 969**	23 157	**-11 521**
32. Balancing item					-335	**85**			557	**11**	-281	**-175**

S = Sources, i.e., net increase in liabilities at transaction value.
U = Uses, i.e., net increase in assets at transaction value.

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1. A negative amount reflects a decrease in that item. In the case of liabilities (sources) it denotes a reduction in the available sources of funds and in the case of assets (uses) it indicates an additional source of funds.
2. Including mutual banks and the Postbank.
3. Before April 2005 the Public Investment Commissioners.
4. As taken from the national income (and production) accounts.
5. Namely deposits with the South African Reserve Bank (including coin liabilities), Corporation for Public Deposits, banks, the Land Bank, mutual banks and the Postbank.
6. Non-marketable bonds and other Treasury bills.
7. Members' interest in the reserves of retirement and all insurance funds.

Table A.3. National financial account 2014, continued, (SARB, 2015, p. S-47)

National financial account (continued)
Flow of funds for the year 2014[1]

R millions

General government				Corporate business enterprises				Households, etc.		Total		Sectors / Transaction items
Central and provincial governments		Local governments		Public sector		Private sector						
S	U	S	U	S	U	S	U	S	U	S	U	
-42 905		-37 207		-16 423		90 730		-54 105		250 692		1. Net saving[4]
54 900		19 510		63 892		308 633		58 938		522 116		2. Consumption of fixed capital[4]
	48 478	28 990		-188		2 018	**64**	18 074	**116**	49 074	**49 074**	3. Capital transfers
	75 300		**54 126**		**149 986**		**406 216**		**69 928**		**772 808**	4. Gross capital formation[4]
-111 783		-42 833		-102 705		-4 899		-47 137		-		5. Net lending (+)/net borrowing (-) (S)
	-111 783		**-42 833**		**-102 705**		**-4 899**		**-47 137**		**-**	6. Net financial investment (+) or (-) (U)
204 122		22 602		107 972		623 859		156 346		1 920 149		7. Net incurrence of financial liabilities (Total S 9 – 32)
	92 339		**-20 231**		**5 267**		**618 960**		**109 209**		**1 920 149**	8. Net acquisition of financial assets (Total U 9 – 32)
										16 602	**16 602**	9. Gold and other foreign reserves
	-18 276		**1 662**		**2 424**		**94 661**		**32 363**	114 382	**114 382**	10. Cash and demand monetary deposits[5]
	33 483		**-5 154**		**2 028**		**703**		**51 117**	121 457	**121 457**	11. Short/Medium-term monetary deposits[5]
	1 570		**337**		**1 623**		**4 718**		**7 828**	16 613	**16 613**	12. Long-term monetary deposits[5]
			545	76	**8 607**		**53 060**		**-25 843**	37 898	**37 898**	13. Deposits with other financial institutions
	19 825					-22 012	**-36 847**		**648**	149 111	**149 111**	14. Deposits with other institutions
32 797							**4 353**			28 417	**28 417**	15. Treasury bills
	-447			-1 076	**-104**	16 779	**12 632**	36		102 981	**102 981**	16. Other bills
7 518		-946		11 072		76 275		33 366		170 030	**170 030**	17. Bank loans and advances
	-120	9 614	**-4 272**	-10 134	**-124**	-31 476	**22 999**	51 548	**14 210**	129 575	**129 575**	18. Trade credit and short-term loans
-8 413					**-2 283**				**-2**	-8 413	**-8 413**	19. Short-term government bonds
157 769					**-5 098**				**-2**	158 334	**158 334**	20. Long-term government bonds
-6 754									**-702**	-6 754	**-6 754**	21. Non-marketable government bonds[6]
		2 380					**-731**			2 380	**2 380**	22. Securities of local governments
	-5 159		**-449**	27 387			**-6 490**		**29**	24 682	**24 682**	23. Securities of public enterprises
	-73	-247	**109**	2 662	**687**	58 352	**-13 743**		**-5**	64 689	**64 689**	24. Other loan stock and preference shares
	700			681	**-188**	321 470	**57 001**		**-67**	413 002	**413 002**	25. Ordinary shares
												26. Foreign branch/head office balances
-4 264	**27 809**	7 740	**-213**	21 817	**91**	50 274	**-438**	879	**1 183**	127 882	**127 882**	27. Long-term loans
		-5	**-25**	-104		56 237		19 991		85 140	**85 140**	28. Mortgage loans
	1 559				**14 142**		**38 031**		**56 582**	**113 499**	**113 499**	29. Interest in retirement and life funds[7]
37 951	**31 467**	-188	**-4 001**	9 289	**-14 806**	112 431	**239 850**	40 782	**-28 130**	5 081	**5 081**	30. Amounts receivable/payable
-12 361		3 894	**-8 827**	45 727	**-1 799**	-14 517	**148 446**	9 744		52 760	**52 760**	31. Other assets/liabilities
-121	**1**	360	**57**	575	**67**	46	**755**			801	**801**	32. Balancing item

S = Sources, i.e., net increase in liabilities at transaction value.
U = Uses, i.e., net increase in assets at transaction value.

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